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ABSTRACT

This study is aimed primarily at the administration of a newly established institute for distance education in Norway, Norsk fjernundervisning (NFU). Purposes of the project, in order of priority, were to provide (1) a working document for the administration of NFU, mapping out available resources, choices of possible media combinations, and the likely cost of implications; (2) an indication to the Board of NFU of major policy issues with regard to the use of media by NFU, and cost and educational implications of certain decisions; (3) an indication to potential co- operative partners of practical implications involved in this relationship, the broader framework within which they would be working, and areas where they would need to make clear policy decisions; and (4) a comprehensive account of the development of NFU up to the end of 1978, and the potential media resources available for its development. In addition to descriptions of this project and NFU, this report discusses broadcasting, video and other audiovisual media, telecommunications, correspondence education, publishing and printing, organization in the field, administrative issues for NFU, and costs for an imaginary project. A summary, with conclusions, is followed by a 50-item bibliography. (Most titles are in English or Norwegian). (RAO)

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APPROPRIATE MEDIA AND METHODS FOR DISTANCE EDUCATION IN NORWAY

by

Tony Bates

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PREFACE

Tony Bates is Head of Audio-Visual Media Research Group, Institute of Educational Technology, Open University, Great Britain. In 1978 he spent one year in Norway as a Post-Doctorate Research Fellow paid by NTNF (Royal Norwegian Council for Scientific and Industrial Research). His research topic was appropriate media and methods for distance education in Norway. This report is a result of his work.

At the Electronics Research Laboratory (ELAB) we are working with a project that deals with the use of telecommunication in distance education. The project is financed by NTNF. The printing and distribution of the report is taken care of by this project. The report is given free of charge to the persons who has supported Tony Bates in his work. Others interested in the report can buy it from ELAB.

There exists also a small report which gives a summary of the conclusions in this report (in Norwegian). This too can be ordered from ELAB.

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SECTION 1

THE PURPOSE AND ORIGIN OF THE STUDY

1. THE PURPOSE AND ORIGIN OF THE STUDY

Norwegian reasons

I was entitled to one year's study leave from my own institution, the Open University in Britain, during the year 1978. I was looking for somewhere to spend that study leave - for reasons that are dealt with a little later - where there were plans to set up a new or alternative form of distance education to the Open University. The British Council, on my behalf, got in contact with their European offices. In turn the British Council office in Oslo contacted Hjalmar Rande, who, at that time (October 1976) was working for Universitetsforlaget, but had been following closely the discussions in Norway on the development of Norsk fjernundervisning, a proposed institute for distance education in Norway. He thought that there would be advantages on both sides if I should come to Norway for one year, to follow the development of this new institution.

At the same time, I wanted to use the experience I had gained from my own work at the Open University, (and from several consultancies with UNESCO, for whom I had worked on projects planning the development of educational media systems in Thailand, Afghanistan and the Philippines) as much as possible towards the development of the new institution. It was therefore proposed that I should carry out a research enquiry on behalf of the new institute. This would have several advantages. It would provide a basis for funding. NTNF* provided a grant for the study, which not only bridged the rather large gap between the costs of living in Norway and Britain, but also enabled me to bring my family with me. At the time of negotiating my visit, Norsk fjernundervisning existed only on paper, having no board or staff. The research grant would guarantee funding, and ensure that I had a viable project to work on, whatever developed at NFU.** It also gave me research indepen-

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*Norges Teknisk-Naturvitenskapelige Forskningsråd (Royal Norwegian Council for Scientific and Industrial Research)

**NFU = Norsk fjernundervisning

dence, the grant coming from an organisation not directly involved in the development of NFU, nor from NFU itself. Further assistance however was provided by Universitetsforlaget, who, through the Oslo University Students' Association, with which it is associated, arranged for family accommodation in the Oslo area.

I travelled to Norway for one week in June, 1977, to discuss possible arrangements, and to talk to representatives of the various organisations likely to be most involved. I talked to the two senior civil servants (Statssekretærer) in the Ministry of Church and Education (KUD*), who assured me that the government was pressing ahead with NFU, and that it would definitely be operational in the near future. I also met the managing director of the Oslo University Students' Association, Kristian Ottosen, who was to be the Chairman of the new interim board for NFU (interimsstyret), Tor Bjerkmann, of Universitetsforlaget, Hans Birkrem, of NRK;** Lars Buer, of A.O.F.*** and Lars Fanavold, of Statens Filmsentral. From these meetings, it appeared that there was support in principle for my getting involved, and that a study which looked at the question of the choice and use of media would be particularly useful.

I therefore applied for a grant from NTNF to carry out a study of appropriate media and methods for distance education in Norway. A grant for the calendar year 1978 was awarded, and I began work in office accommodation provided by NFU's interimsstyret in the same location as the interimsstyret's secretariat at the beginning of January, 1978. By this time Hjalmar Rande, who had been instrumental in making most of the practical arrangements and negotiations for my visit, had been appointed Secretary to the interimsstyret.

The project

Initially, the proposal to NTNF was rather loosely defined. It pointed to the rapid developments that were taking place in educational media, and that the choice of

*KUD = Kirke- og undervisnings departementet
**NRK = Norsk rikskringkasting (State broadcasting organisation)
***A.O.F. = Arbeidernes Opplysningsforbund (Workers Educational Association)

audio-visual media for a distance education project was becoming more complex and difficult to make, and that the "best" choice depended usually on the particular facilities already available, the geographical configuration of the country, the control and access to resources, as well as purely educational factors. It was proposed therefore to carry out a study of the most appropriate media and methods for distance education, and to research into the most appropriate ways of integrating and combining such media, in the context of Norwegian developments in distance education.

The purpose of the study was to some extent determined by the developments that took place after I arrived in Norway. I had hoped that before I left, there would have been an established Board for the new institute, and a permanent administration, or at least a full-time director (daglig leder). It became clear though towards the middle of the year that this was not likely to happen before I left.

For this reason, I decided that the most useful thing I could do was first of all to provide a survey or map of existing resources in the media field (including person-to-person contact, through correspondence or face-to-face contacts), and some tentative explorations of how these existing resources might be incorporated into or adapted to the work of NFU. The study then was aimed primarily at the new administration of NFU. However, it became clear in the course of the study that choice and use of media would be influenced by a number of policy issues which, even towards the end of 1978, have still to be decided. These are issues which, sooner or later, the Board of NFU will have to tackle. One of the things then that the study has done is to identify, perhaps a little sooner, some of the key policy issues that have to be decided, and some of the economic consequences of certain decisions. It has not though been my intention in the main to suggest what policies should be adopted. That is clearly the responsibility of the Board of NFU and the Ministry of Education (KUD). It also became clear though in the course of the

study that many of the organisations on whom NFU will be dependent for resources and assistance, while favourable in principle to the idea of co-operation with the new organisation, were themselves unsure in what way they were expected to work, or what the consequences would be for their own organisations. Therefore I came to see the study as being possibly helpful to the co-operative organisations themselves in judging the implications of the setting up of NFU, and identifying the policy issues they themselves will have to resolve. Finally, I believe that NFU will become an organisation of considerable interest to other organisations and people from outside Norway, especially if outside help is to be sought by NFU for training, and development of the first projects. For this reason, I have tried to give a general picture of available resources in educational media in Norway.

To summarise then, the purpose of the project can be listed in order of priority:

1. to provide a working document for the administration of NFU, mapping out available resources, choices of possible media combinations, and the likely cost implications;
2. to provide the Board of NFU with an indication of major policy issues to be decided with regard to the use of media by NFU, and some of the cost and educational implications of certain decisions;
3. to provide potential co-operative partners with some idea of the likely practical implications of working with NFU; of the broader framework within which their own organisation will be working; and to point out areas where the co-operative organisations themselves will need to make clear policy decisions;
4. to provide as comprehensive as possible an account of the development of NFU up to the end of 1978, and the potential media resources available for its development.

British reasons: an alternative distance education system

I work at the Open University in Britain. This is perhaps the largest and best-known distance-teaching system in the world. It has over 60 000 adult students, working in their own time, primarily at home. They are following courses leading to a publicly recognised University degree, in most instances. Students follow courses specially designed by the University's own full-time staff. The courses consist of printed correspondence texts; television and radio programmes (made specifically for the courses as an integrated component by the BBC, through a partnership arrangement); some face-to-face teaching, at local centres in the evenings, regional weekend schools, and national summer schools; and correspondence tuition.

I have been at the Open University since it started, in 1969, and have been head of the audio-visual media research group in the University's Institute of Educational Technology since 1971. Since 1971, I have built up an entitlement to one year's study leave. One of the aims behind study leave is to enable academic staff to refresh and up-date their specialist knowledge. In my own field, that is rather difficult to do. There are comparatively few distance teaching institutes, and rarely more than one in each country. At the same time, there were a number of developments in the Open University, and adult education generally, which led me to take an interest in alternative models of distance education.

The Open University model is based on self-sufficiency. The University more or less has full control of its budget, academic programme, methods of teaching, and production resources. It does of course depend heavily on co-operation from the BBC, other higher education institutions, and local government authorities, but nevertheless, the Open University - like all universities in Britain - is very much master in its own house. Furthermore, it has concentrated most of its

efforts on providing courses leading to University degrees. This is a particularly appropriate role in Britain, which still has a highly selective higher education system, and where, before the creation of the Open University, it was almost impossible to take a degree while working at the same time, at least outside London. There is therefore still a large "market" for working adults who want to take higher qualifications, 50 000 applying each year for 20 000 places. It is in fact filling a requirement which, at least up to now, other higher education institutions have not given high priority to. It is also very large and expensive. It has over 2 000 full-time and 6 000 part-time staff, 140 different courses on offer, and an annual budget of over £30 million.

Despite its success, both in attracting and in graduating large numbers of adult students, and winning political support and financial security in a country which is continually in economic difficulties, the Open University does not (or has not been able to) provide for a wide range of adult education needs which are not yet being met by other institutions. Although many of its students come from working-class backgrounds, most now are in non-manual, more "middle-class" occupations - teachers, clerical workers, laboratory technicians, and so on[1]. While the University is without doubt balancing some of the inequalities faced by the British working class in earlier years regarding higher education, it is appealing mainly to those who are already socially mobile, in that they have moved out of a working class background into a mainly "lower-middle-class" range of occupations, and are frustrated in further social mobility by their lack of higher educational qualifications. Although the proportion increases steadily each year, the number of "blue-collar" workers taking Open University courses is still less than 10%.

Secondly, until recently, the University has catered almost entirely for students who wanted a degree. Some of its courses were available separately, but these were

courses which were part of the degree programme, but made available to those who wanted to follow just that course. In the last year, though, the University has set up a Continuing Education Delegacy, whose aim is to offer a wide range of courses, quite separate from the degree programme. Some of these, such as courses for non-medical health and social workers, will still lead to professional qualification. Others though, such as short courses for mothers with young children, will not be aimed at providing formal qualifications.

I believe that this area of development, distance education courses for adults, not leading to higher educational qualifications, is the most vital and important for education in Britain today. It is an area which has not been served well in Britain. The situation in Britain is not altogether that different from Norway. There are correspondence courses; the BBC has a strong Further Education Department; there is a wide range of public and voluntary organisations providing evening classes. Rarely however have these areas got together to provide integrated, multi-media courses. When they have, it has been mainly due to the interpretation of an individual organisation as to how its own particular organisation can meet a popular need, then seeking partners from other areas. There is no overall attempt though to set national priorities, to co-ordinate activities, to produce integrated multi-media courses designed specifically to meet the needs of a particular target group.

There are also differences with Norway. The BBC, and to a lesser extent the commercial television companies, have been more active in this field than NRK; the correspondence schools in Britain, on the other hand, are nowhere near as strong or as professional in their approach as the main ones in Norway; and the voluntary organisations are much more powerful, financially, politically, and in terms of enrolments (as a percentage of the adult population) in Norway than their equivalents in Britain.

Nevertheless, weak or not, these kinds of organisation do exist in Britain. Whereas at the degree level, the Open University was entering an open field, at the continuing education level there are many other occupants in the same field. Furthermore, these organisations often have more experience and a better knowledge of the target groups than the Open University. Although the new Delegacy is semi-autonomous, and is expected to be financially independent of the University's main source of funding - i.e. it is expected to get money for its courses from sponsors or from fees alone - it is still part of an academic institution. It seems to me then that one possible role for the new Delegacy would be to act as a co-operative partner with other, existing institutions and organisations. The Open University's main strength is its experience in integrated, multi-media design, and access to specialist production facilities for distance education materials. Its weakness, as far as the Delegacy is concerned, is its dependence on outside funding, and its location in an academic institution. Partnership would allow it to combine its unique experience in designing, producing and distributing integrated distance education material, with the organisations' field experience, back-up services, and better knowledge of the target audiences. Together, rather than in competition, the Open University and the other existing organisations involved with adult education in Britain are more likely to win the necessary funding, and reach more easily that most difficult target group of all, those who have left school, usually without good academic qualifications, and who have never been back to any kind of continuing education. That, I write with some shame, is the majority of the adult population in Britain.

My hope is that the experience I have gained in this year in Norway will provide me with a better understanding of how the Open University could develop co-operative working partnerships with other organisations, particularly with regards to the use of media for distance education projects.

REFERENCES

1. McINTOSH,N.E., CALDER,J. and SWIFT,B. A Degree of Difference. London: Society for Research into Higher Education, 1976.

2. NORSK FJERNUNDERVISNING

Background to the development of NFU

Distance education, in one form or another, has existed in Norway for well over half a century. For instance, the first correspondence school (NKS) dates back to 1914, and the first radio broadcast to schools was in 1925. This study though is mainly concerned with the consequences of a decision by the Norwegian parliament (Stortinget) on 17th March, 1977, to set up a State institution to be called Norsk fjernundervisning (Norwegian Institute for Distance Education).

NFU itself has a comparatively long line of development. Its history[2] can be traced back to the mid-1960's, when the idea of the University of the Air was first floated by Harold Wilson in Britain, and the committee for television and radio (TRU) was being established in Sweden.

In Norway itself, Stortinget in 1966 set up the Bargem committee to look at the question of the use of television and radio in education. Its report was completed in 1969. Stortinget dealt with the matter in 1972, when it discussed a proposal from the Ministry of Church and Education (KUD) that a separate institute should be set up, under KUD's authority, to take over the work of the schools television and schools radio services from the national broadcasting organisation, NRK. It was pointed out that the use of television and radio in education had to be seen within a broader educational framework. For instance, in the parliamentary committee's response to KUD's proposal, it was pointed out that television and radio were only two of a range of educational media, and it was important to determine which media were most suitable for different learning and teaching purposes. It was within this broader framework that educational television and radio should be designed. There was also strong opposition from the staff in the education departments of NRK to being moved out of NRK into a new institution.

Five years later, however KUD presented a fundamentally different proposal for a new institution. Instead of a large organisation with its own production resources, a small institute was proposed, based on co-operation with already existing organisations. Television and radio were seen as integrated parts within a broader educational framework. At this time, indeed, it was not broadcasting but publishing which caused the most intense discussion. The publishers' association (Den norske Forleggerforening) was concerned about the special relationship being proposed between NFU and Universitetsforlaget, a publisher of specialised higher education books, and research and government reports. With the proviso that any arrangements between NFU and Universitetsforlaget would not prevent other publishers also being able to participate fully in NFU's activities, the proposal to set up NFU was passed in the Stortinget with only one vote against.

Stortinget's bill[3]

1. Aims

The parliamentary bill lays down the following objectives for NFU:

a. It shall through its own production and through joint agreements with other institutions and organisations carry out the planning, production and distribution of different courses and materials for distance education.
b. It shall be able to set up conditions for two-way communication with its students, wherever possible.
c. It shall develop new courses and materials as the need for this arises.
d. It shall establish a continuous contact with the rest of the education system and with different educational institutions and organisations.

The bill goes on to say that: "...the institution must be developed primarily with the aim of providing educational

opportunities intended for adults, people in employment, who have no chance of using the educational facilities already available to the public. NFU shall provide courses leading to qualifications and other kinds of courses. Courses will be directed towards theoretical and practical subjects in the basic school sector. A primary responsibility will be to provide courses for adults who because of changed conditions in their lives and work now need training in a profession or trade to adapt themselves better to work and social life." Others named in the bill as possible target groups for courses are handicapped people and immigrant workers.

2. Working method.

The parliamentary committee defined distance education as follows:[4]

"The committee understands distance education (fjern-undervisning) to mean all education where the provision of subject matter through personal contact between learner and teacher is limited to some extent, and where the basis then for such provision is through print, radio and television programmes, film, in addition to recorded material such as records, audio tapes, film-strips and cassettes."

NFU itself must set priorities for the kind of courses it wishes to develop.

For each actual project, a pre-project planning group should be set up (forprosjektgruppe) to sketch out a course outline and to evaluate which different media it will be appropriate to use, as well as a timetable and cost estimates. When NFU's management has decided on the plans in principle, a permanent project group will be set up to develop scripts for the various media to be integrated in the course.

The way the full project group will work is not so clear. Originally, KUD proposed that the full project group would prepare scripts, and hand these over to the various relevant organisations for production. The Parliamentary committee though thought there would be difficulties in this kind of division of responsibility between educational and technical matters.

Consequently, the Parliamentary committee made a distinction between courses which are originated and managed by NFU itself, and courses where the co-operative partners are more than just technical hired hands, but have educational and professional competence in the subject area, and have responsibility for running a substantial part of the project. The Parliamentary committee therefore made the point that NFU's professional and educational control over co-operative partners should be primarily related to choosing and giving priority to projects, with specifying the main content to be covered by a project, the overall educational approach to be taken, and choice of appropriate media. Where though co-operative partners are expected to contribute to the running of a course or to have responsibility for parts of the project programme, then both at the planning stage and the full project they should be allowed to participate in such a way that they can guarantee the professional and educational quality of the end-product.

The bill also proposed that NFU should attempt to appoint or nominate (oppnevne) a local contact person in each area. This person should give professional and subject-matter advice, and personal guidance on study techniques. The organisation at a local level should be aimed at helping those students who preferred to work individually. NFU should keep in contact with both the public education system and the voluntary organisations at a local level. The parliamentary committee strongly emphasised the importance of direct student/tutor contact, and that this was one area where attempts should not be made to trim costs.

3. Co-operative partners

NFU will not have its own resources, but will have to rely on the use of existing resources owned or controlled by other organisations. The bill named three specific partners:

i. NRK. It was assumed that any agreement between NFU and NRK would be preceded by a co-ordination within NRK of the activities of schools television, schools radio, and adult education programming. It was suggested that a co-operative agreement should be based on three elements:

a. an on-going agreement about the level of programme production, distribution of resources and transmission time.

b. agreements on the content of programmes and a yearly programme plan.

c. regular contact over the production of individual programmes, so that NFU's programme intentions can be safeguarded.

The proposed basis of the agreement was that educational television and radio were to be fully integrated into the educational system, under the direction of NFU. The final responsibility for educational content should be NFU's, while programme responsibility would be the Head of Broadcasting's, with regard to NFU projects. NRK though would still be free to make its own programmes aimed at educational use, outside any agreement with NFU. Again, though, the parliamentary committee were not happy with the proposed division of responsibility between educational and professional matters, and suggested that this might be a source of future conflict.

ii. Statens filmsentral. A similar kind of agreement was proposed for Statens filmsentral.

iii. Universitetsforlaget. The bill proposes that NFU should enter into an agreement with Universitetsforlaget,

a publisher originally of higher education and research material, but more recently of books in other educational areas as well. The parliamentary committee accepted the need for NFU to have a guarantee that publishing services would be provided, and that this should be the basis of an agreement with Universitetsforlaget. At the same time, it was stressed that the actual agreement with Universitetsforlaget should not prevent, formally nor in practice, other competent Norwegian publishers from having the opportunity to participate on an equal footing in the development of teaching materials for NFU.

iv. Other relevant partners. It was also proposed that NFU should be able to contract on a project basis with a number of other partners as well as NRK, Statens filmsentral and Universitetsforlaget. It can also make use of already existing material for distance education purposes, as well as adapt materials from other countries to Norwegian conditions. Specifically mentioned as other possible partners were producers of printed material and different kinds of audio-visual material, and many of the correspondence schools.

It was also pointed out that the agreements should be drawn up in such a way that all co-operating partners are ensured of a fair recompense for the services they provide.

4. The organisation of NFU

NFU is to be responsible to KUD. It is to have its own budget, which must cover not only the costs of administration of NFU itself, but also all project costs, including production and transmission of programmes. There will be a board of management of six, and an advisory council, covering not only the main work organisations and unions, adult education organisations and other educational institutions, but also representation from users of NFU's materials and courses.

Two main departments are proposed. The first is an education department, responsible for educational issues regarding the work of NFU, and a production or administrative department, responsible for aspects concerning the production of materials and the administration of NFU projects.

It is proposed that the staff of NFU should constitute a total of about 7-8 staff, and should have a budget in its first year of around 3 million kroner. It is to be based in Oslo.

Events since the bill.

After the bill was passed in March, 1977, the Minister of Church and Education appointed an interim board, (interimsstyret), whose main duties were to draw up regulations for the new institute, terms of reference for the new board, job descriptions for the most important posts, draft agreements for co-operation between NFU and NRK, Statens filmsentral and Universitetsforlaget, and any other institutions, find a location or offices for the new institution, and recruit necessary assistants for the work of the interimsstyret. (see Appendix 1 for membership of the interimsstyret).

The interimsstyret was appointed on 9th September 1977, and the first meeting was held on 12th October, 1977. An administrative secretary (Hjalmar Rande) was appointed full-time to service the work of the interimsstyret, plus an office secretary, and offices were found near the University. The interimsstyret's report was presented to the Minister on June 9th, 1978.[5]

Altogether, the interimsstyret had 11 ordinary board meetings. It also met with each of nine institutions individually who were likely to be partners or directly involved in or by the work of NFU. It held a seminar with all the organisations likely to be affected by NFU, as well as a seminar for a number of specialist boards in the educational

field. It also held a seminar with individuals who were working professionally in the field of distance and/or adult education. It also visited distance and adult education institutions in Sweden and Britain.

With this as a background to its work, the interimsstyret drew up a set of proposals to the Minister on the work of NFU and draft agreements with the main, named co-operative partners.

The interimsstyret proposed that NFU should appoint members of the pre-project planning group, and they should - in line with Norway's law of adult education - include at least one representative of those likely to participate in a project as a student. There must be also included the necessary subject experts, and someone with experience of developing multi-media teaching material, probably from NFU's staff. In any case, there should always be at least one person from NFU's staff on each project group. Representatives from the organisations likely to create the learning materials should take part in the discussions of development and production of learning materials.

When the pre-project proposals have been agreed in principle by the Board of NFU, a full project group should be appointed. The interimsstyret stressed the importance of continuity, so at least one of the pre-project group should be a member of the full project group. Representatives from the co-operating organisations must be represented in the full project group, either in the main group or in sub-groups concerned with specific problem-areas. There must be a representative of NFU in the full project group.

The interimsstyret also emphasised the need for one central contact point for participants in courses, even though there may be several different organisations distributing materials. It also recommended that wherever possible, the tutors, even if correspondence teachers primarily, should be found as close as possible to where students live, to

facilitate personal contact, or contact via the telephone. It also proposed that NFU should try to ensure, through the project groups, that there were opportunities for students to meet together , either in local study circles, or, if that is not possible, through regional seminars. It also pointed out that television and radio will be important media for distance education projects, but there should also be the opportunity to use other media as well, as integrated parts of NFU projects. Finally, it also proposed that NFU's activities should be evaluated, and the individual project groups should contact Norsk Voksenpedagogisk institutt and other organisations with research experience and facilities to help with evaluation.

With regard to relationships with other institutions, the interimsstyret stressed the need for NFU to avoid duplicating the activities of existing organisations working in the field of distance education, but to strengthen and co-ordinate their work. The interimmstyret authorised the payment of money from NFU's budget for the equivalent of three man year's work from NRK, to help it begin planning and production of adult education programmes (see section 4), and also joined NFU to the development of a new International Institute of Distance Education, which so far has association with similar institutions to NFU in 14 different countries.

Finally, the "interimstyret" put forward draft agreements for co-operation between NFU and the three organisations named in the Stortinget's bill. It emphasised that although the main principles of the agreements have been accepted by the relevant institutions, the agreements are still drafts, and recommended that when the full board for NFU is named, it should discuss these agreements before they are finalised. In any case, it suggested that NFU should have at least 5-10 years experience before a firm pattern of co-operation can be established. (The agreements with co-operative partners are dealt with more specifically in the various sections to follow). At the time of writing, none of the proposed agreements had been formally signed.

The Interimsstyret's report was presented to the Minister on June 9th. The full board was appointed on October 1st, 1978 (see Appendix 2 for a list of members). The secretariat for the interimsstyret was extended to April, 1979, to provide continuity, and to service the new board until the permanent staff of NFU are in post. At the time of writing, the first posts are about to be advertised. The board has met twice so far, and this report will be presented to the boards third meeting.

REFERENCES

2. RANDE, Hj.: Norsk fjernundervisning - et lite "koplingsbord" Videregående Opplæring. No.6, 1978

3. St.prp.nr.139 (1975-76): Om fjernundervisning Oslo:KUD, 1976

4. Innst.S.nr.218(1976-77): Innstilling fra Kirke-og undervisningskomitéen om fjernundervisning. Oslo, 1977

5. KUD Innstilling fra Interimsstyret for Norsk fjernundervisning om Norsk fjernundervisnings organisasjon. Oslo, 1978.

SECTION 3

METHOD OF ENQUIRY AND WORKING ASSUMPTIONS

3. METHOD OF ENQUIRY AND WORKING ASSUMPTIONS

This is an unusual research study. It is based almost entirely on secondary data - i.e. information already available in printed form, or information given to me by other people. Also, as far as choice of media is concerned, the normal starting point - the target audience - for choice of media is not known, except in the most general terms. Indeed, there is very little in the way of firm policy to guide the direction of the research. It is particularly important then in this study to be aware of the main assumptions I have made in carrying out the research, of the strengths and weaknesses of the data I have collected, and the way I have interpreted the information available.

Working assumptions

My approach has been guided almost entirely by three basic documents: KUD's proposition to parliament on fjern-undervisning [3]; the report from the parliamentary committee on fjernunder-visning [4]; and the report of the interimsstyret[5] . These have provided the basic policy framework within which I have based the study. Occasionally, I have gone to the Secretary of the interimsstyret, and asked what the policy or decision was regarding a certain issue. Almost always, his response also was based on these three documents, and he stressed even then that he could give only his personal interpretation.

The major policy decision which has yet to be resolved, and on which I had to make an assumption, is whether NFU is going to be primarily a bag of money, enabling existing institutions to do extra things which they do not have sufficient money to do at the moment (with perhaps a little persuasion from NFU to work more closely with other organisations, as a condition of getting the money) or whether NFU is going to be a strong, even dominant organisation, funding only those projects which NFU is prepared to organise and possibly control itself.

I have made perhaps the rash assumption that NFU will tend towards the latter kind of model. This is based on my interpretation of NFU's aims (oppgaver), contained in all three documents, that it should provide opportunities for

adults, people in employment, who have no chance of using the educational facilities currently available to the public. I have interpreted this as meaning that most projects will aim at those people who cannot get to study circles, or who find correspondence education (on its own) too stressing or too difficult to follow without strengthened support. In other words, the aim should be to find ways of delivering distance education learning materials to the students homes, creating primarily a home-based learning system. I am also . I must confess strongly influenced by the educational philosophy of Richard Freeman, the Director of the National Extension College in Britain, who argues:

> "...the learning opportunity should be available to any person, at any level, at any time, at any place, and in any subject. Yes, I mean that you should be able to do Chinese at three o'clock in the morning in a Welsh mountain village, or learn multiplication tables at 4.00 p.m. in central Birmingham"[6]

This is not to deny the importance of personal contact between teacher and learner, or the social role of adult education. This though is surely the responsibility of existing educational services. I have assumed that NFU's task is to get at those who cannot use existing services, and that this will require, at a minimum, a service which relies heavily on home-based learning. Of course, NFU will also strive to provide social contact, and to use local centres, and I have looked at ways of using such centres. But it is much easier to provide audio-visual media resources to groups at a centre than it is to deliver them straight into their homes, at a time and in a way that is useful to home-based learners. This seems to me to be one of the challenges that face NFU, and therefore in this study I have looked particularly at the problems of home-based audio-visual media, and their integration with correspondence education and local, person-to-person contacts, where these can be provided.

The second assumption I have made is that NFU will pay for all the costs - or at least most of the costs - of a project, and that co-operating organisations will be paid enough to cover their costs and overheads, but not enough to make a fat surplus.

Collection of data

I drew up at the start of the project a list of sectors (broadcasting, publishing, correspondence schools, etc.) and asked Hjalmar Rande to put me in touch with at least one person from each sector. If there were competitors in that sector, or if there were separate public and private institutions in the same sector, I tried to see a representative from each. I prepared a set of questions about existing resources and how they saw their organisation working with NFU, and any difficulties that might arise, collected as much printed literature that I could about the organisation, and asked for other contacts in similar organisations. A full list of institutions contacted in the course of the study is listed in Appendix 3. I also got hold of as much Norwegian printed information that I could, in the way of official statistics, annual reports, State budgets, and research reports in the field of distance and adult education. These are all listed in the references at the end of each section. At the end of the study, I wrote a draft on each sector, then sent a copy to those in that sector that I had interviewed, asking for comments, and corrections of errors, or important omissions (høring). As far as possible, all errors of fact have been corrected on the basis of these returned comments, although it was not always possible to remove items with which people did not agree (although fortunately these are very few, and are usually indicated in the text as points of disagreement).

Most of the people interviewed were based in Oslo. However, a very important part of the study was a round trip taken to Bergen, Trondheim and Røros. To get a better idea of conditions in the field, I chose Røros as a case

or example of the kind of community which should benefit directly as a result of the setting up of NFU. Røros was chosen because it is a widespread community based around a small town, a good distance from the nearest large urban centre, and because it was accessible to me by train, as part of a combined round trip. (This was important, as I had limited funds for travel within Norway - this trip was paid for by NTNF). Also on this round trip, I took the opportunity to visit the University of Bergen, the chairman of NRK's research advisory committee, the media department at Bergen lærerskole, the county librarian in Sør-Trøndelag, the adult education sector of Sør-Trøndelag's skolekontor, and the local A/V centre in Trondheim. Contacts with local students and study organisations in the Røros area were arranged for me by the local Samnemnda representative in Trondheim. In Røros, I met six representatives from the smaller voluntary organisations, who discussed the local availability of courses, problems in studying, local resources that might be used for distance education, and possible problems. A similar discussion was held with a representative of the local skolekontor and the local Friundervisning representative.

Where I have had the time, I have watched NRK school and adult education programmes, looked at examples of correspondence material, and even attended a local Friundervisning class to learn Norwegian. However, I have tried not to be influenced too much by such experiences, as I have no way of knowing whether or not they are representative.

There are obvious limitations in collecting information in the ways described. The main problem is individuals speaking for organisations, particularly on policy issues. Without a formal meeting with the Board of each of the relevant organisations, it was impossible for individual representatives - even Directors or managers - to say what the organisations policy would be, until a real issue was presented. Nevertheless, most people interviewed did give their personal views of what policy might be, on the under-

standing that this was a personal view, and did not in any way commit their organisation.

Another possible difficulty is not being sure whether one is getting the whole story. I must say I was surprised both by the openness of people with whom I spoke, the willingness with which they gave me information, and the range and quality of the information available. There is a distinct difference in Norway from most places where I have worked (including, I have to say, Britain), where information is often considered private property and potentially dangerous in the hands of "outsiders". I do want to record the fact that without exception, everyone approached gave me the information I requested (if it was available, which it usually was), including cost data, and that the information was usually available in a clear and usable form.

Even when people are fully co-operative, there is still the problem of being influenced by one's own position and the way one sees one's own job and interests. I therefore always tried to see at least one representative from two organisations working in the same field, or - where there was only one organisation, such as broadcasting - people who had carried out research or had previously worked in that area.

In the end, I can only make a subjective judgement on the reliability of the data. Indeed, those with a special interest in the different sectors will be in a better position than I to judge the accuracy, reliability, and comprehensiveness of the information. I cannot be sure about the comprehensiveness - there are areas or sectors that are not covered fully in the report, such as higher education and the smaller correspondence schools - but I do feel reasonably confident about the factual information that <u>is</u> included.

Analysis and use of information

Without a Board or administration to indicate priorities, resolve policy issues on the spot, or to rule out certain approaches, it was not possible to focus down on just a few areas. This is one reason why the report has had to be so long. Another is that when the administration has come, I shall be gone. I do not know how much those who come in will know about the various sectors covered in this report, and I have tended to put it all in, rather than leave it out. For this reason, and because of the need to relate the issues to potential co-operative partners, I have grouped the report under media sectors, in the main. This made it easier for "høring" reducing the size of the draft reviewed by each organisation. There is though a danger in this. No sector - I hope - will be independent of the other sectors. Section 5, on video and other audio-visual media, is directly relevant to Section 4 on broadcasting, and vice-versa, for instance. I hope that those who read this report and are working in relevant co-operative organisations will read not only the section which refers to their own area, but also at least the comments and conclusions at the end of other sections as well.

Also, because of not knowing what future policy decisions will be, I have tried to distinguish between fact and speculation. At the end of the major sector sections I have a part called "Comments and Conclusions", in smaller type. Here I have made projections of costs, pulled out policy issues, and sometimes added my own views. The first part though is meant to be a more straightforward factual account of the present situation, and what people have told me is likely to happen within their own organisation. I have recorded in these parts the opinions of people I interviewed, including in places criticisms of existing arrangements. Sometimes, in the høring, people have disagreed with these criticisms, but I did not feel it right to remove these criticisms, unless I was sure that they were unjust or based

on wrong information. The fact that the criticism is there does not necessarily mean that I agree with it or even that it is justified. The reader must judge that for himself.

A word also needs to be said about cost data. It can generally be taken from experience in other distance education projects that all costs are generally underestimated, but that the error in costs is always greater (on the side of underestimation) for untried systems than for systems on which there is some experience. It is very important that too much emphasis is not placed on the actual costs themselves. These will almost certainly be subject to a wide margin of error. They are nevertheless still useful in giving an indication of order of magnitude. If tuition costs for instance come out at ten times the cost of print material, even with substantial errors in estimates for both print and tuition, one can see where most of a project's money will go. More importantly, I have used cost projections as a device, a trick, to force out into the open policy decisions that need to be taken, not just about methods of costing, but about priorities, ways of working co-operatively, and so on. Like hanging, having to face up to the cost of something can clear the mind wonderfully.

From this, it should be clear that this is not a research report in the "hard", natural sciences tradition. It should not be taken as gospel. It is my view, my interpretation, my recording of what I think other people have said to me. I have tried to be as careful and objective as possible, but added to the usual problems of this kind of research is the language problem. Most people have spoken English to me. Most of the documents I have tried to translate from the original Norwegian. The potential for misunderstanding is considerable. I wish to make it absolutely clear then that any errors of fact, omissions or misunderstandings are my fault entirely. The report does not reflect the views of NTNF, nor the official policy of any of the organisations mentioned in this report, least of all NFU. I do hope though

that despite its faults, the report will be useful to the administration of NFU, and also, I hope, to NFU's Board and the other organisations on whom NFU will so obviously depend.

REFERENCES

3. KUD St.prp.nr.139(1975-76):om fjernundervisning. Oslo:KUD, 1976

4. KUD Innst.S.nr.218:Kirke- og Undervisningskomiteens innstilling om fjernundervisning. Oslo: KUD, 1977.

5. KUD Instilling fra Interimsstyret for Norsk fjernundervisning om Norsk fjernundervisnings organisasjon. Oslo:KUD, 1978

6. FREEMAN,R. Open learning now? The Listener. 14 October, 1976.

4. BROADCASTING

GENERAL

Norsk rikskringkasting (NRK) is a State institution, under the responsibility of Ministry of Church and Education. It is a monopoly organisation, financed out of license fees (currently kr.400 a year), paid by owners or renters of television sets, and from a special tax on reception equipment. NRK's total budget in 1979 will be 742 million kr. Although formally responsible to KUD both for budget and programming responsibilities, its management is semi-autonomous. NRK has a board, appointed by the Ministry, and an advisory council.

The first school broadcast was in 1925, although school radio began formally in 1931. School television began in 1962. Until this year, school television and school radio have been organised as quite separate departments. There has been no adult education department, programmes in this area being made by the cultural television and radio departments and by school radio. Both schools and adult education programmes have been paid for so far entirely out of NRK's own budget.

PRODUCTION

Situation to September, 1978

Output: There has to date been very little production of adult education programmes. In 1977, there were five new radio programmes produced (by the school radio department), plus 27 programmes repeated from previous years.[1] However, the cultural department (Opplysningsavdelingen) transmitted more than 4000 programmes in 1977, covering areas such as art and literature, social issues, work and family life, agriculture and farming, the environment, and religious programmes. In 1978, 5 radio programmes were produced for adult education, and 28 "Start" programmes were repeated from earlier years.

However, there were no new productions of television at all for adult education in 1977, although there were 29 hours of repeats from previous years of "Start" programmes.

In 1978, six ecology programmes were produced ("Det store samspillet") by the cultural department of NRK. These programmes were transmitted over two periods, January to April, and again in the autumn. Both the "start" series and the ecology series were linked to parallel course provision from correspondence schools and voluntary organisations, organised through a joint committee set up by NRK, Norsk Brevskoleforbund, and Samnemnda, and called Mediautvalget for voksenopplæring. As with radio, the television cultural department produced and transmitted a large quantity of programmes in 1977 that might be considered educational in the broader sense, but were not classified as such.

School television and radio departments have a more substantial output of programmes than for adult education, but their situation can be seen as being static over the years. Table 1 sets out the position for the years 1976-79:

Table 1: Radio production[7] and budget[8], 1976-79: schools

	1976	1977	1978	1979
New production (programmes)	301	291	274	284
Repeats from previous years	27	12	24	24
Programme budget (in million kr.)	0,9	1,0	1,2	1,3
% of radio programme services budget	1,7	1,7	1,8	1,7

School radio in 1978 provided 2,1% of radio transmission time in 1977[7].

Table 2 sets out the position for television (see over).

In a research report on Norsk skoleradio by Handal[9], written in 1973, but reporting data collected by survey in 1970, Handal noted that in 1970, school radio programmes numbered 441, and provided 2,4% of radio transmission time, and 2,1% of the radio

programme services budget. By 1972, these figures had dropped to 377 programmes, 1,8% of the transmission time, and 1,8% of the programme budget.

Table 2: Television production[7] and budget[8] 1976-79: schools

	1976	1977	1978	1979
New production (programmes)	57	57	51	51
Repeats from previous years	122	127	141	141
Budget (in million kr.)	2,0	2,4	2,4	2,6
% of TV programme services budget	3,2	3,5	3,2	3,2

School television in 1977 provided 8,1% of television transmission time.[7]

In addition to programmes, school radio in 1977 produced 17 sets of accompanying texts, 92000 copies of which were sold, at a value of 600000 kr. In co-operation with Statens filmsentral, 32 tape-slide programmes with accompanying texts were also produced.

Staffing: In the year 1977-78, staffing was as follows:

Adult education, TV:	1 (on one-year contract)
Adult education, radio:	1 (on loan from school radio)
Schools, TV:	7 (one on contract)
Schools, radio:	6 (one on contract)

These 15 people were all producers, but there are also support staff. Altogether, there were 29 production av professional support staff working in the education departments.

Due to government policy on decentralisation, there is a block on all new appointments to NRK in Oslo. Therefore there is no opportunity for appointing new staff for educational broadcasting in Oslo out of NRK's own budget.

There has been a small increase in professional staff in both schools television and schools radio over the last 10 years.

Production facilities: There are five television studios (four for colour productions), plus two small studios which can be used in conjunction with an outside broadcast van. Norway is divided into 11 regional areas. In each of these areas there is an NRK centre. Eight of these centres have film and film editing equipment, and, in five centres, electronic television equipment as well. A new television and radio production complex was opened in Tromsø in April, 1978. Each of the 11 areas also has its own radio production studio, and transmission link, which can either form part of the national network, or can provide regional programmes. The whole country now has its own regional production facilities for radio, plus the main radio production facilities in Oslo.

There is then spare production capacity, in terms of studios and technical resources, both for television and radio, although there is a shortage of editing and technical staff.

Links with the educational world: Adult education programmes have been co-ordinated in recent years through Mediautvalget to provide accompanying correspondence texts and study circles. However, Mediautvalget is not, and would not claim to be, an advisory board or council setting priorities for the use of broadcasting in adult education. It is primarily a mechanism for co-ordinating production and organisation of different media components for separate courses covering the same subject area. Priorities for adult education broadcasting have been set by NRK, although of course the setting-up of Mediautvalget has provided a bridge between NRK and the other adult education bodies that are represented through Mediautvalget. In any case, Mediautvalget has so far been responsible for co-ordinating only two completed series, and its status, and the way the relevant organisations are represented, is a matter of some controversy. It would not be unreasonable then to say that while Media Utvalget is an important improvement in co-ordination and liaison between broadcasting and adult education organisations, there has up to now not been an official, representative mechanism for advising NRK on priorities for adult education programming. This presumably will be one of the major roles of NFU.

There is even less of a formal structure for advising NRK on priorities in school broadcasting. There is no advisory educational council, no NRK education officers liaising with schools, no-one from educational institutions or schools responsible for advice or liaison on broadcasting matters. NRK does hold meetings with invited teachers to discuss plans for future programmes and to receive information back about past programmes. These meetings though are not frequent, and were criticised by several people interviewed, on the grounds that those teachers who attended were already those committed to the use of broadcasting, and were not representative of the whole teaching profession.

NRK on the other hand would strongly deny that their contact is only with teachers favourably disposed to broadcasting. The education departments are trying as far as possible to increase and widen the contact with teachers, through meetings with about 500 teachers over the internal radio network, regular attendance at school planning days, where hints and for advice are given on how to use programmes, and where programme ideas are collected from teachers. These suggestions in turn are sent out to different school districts for evaluation and determining priorities according to the needs of the schools.

The NRK education department though is aware that it would be highly desirable to have increased contact with the schools, and indeed would like to have a similar system to that of the BBC, which employs full-time field liaison officers. With a total of 15 professional production staff, covering all schools subjects on both television and radio, the opportunities for close and frequent links with the schools are obviously limited, despite the desire and effort of the broadcasters.

Utilisation and research: With so little adult education broadcasting to date, it is not surprising that there has been little in the way of rsearch into utilisation. However, there is some information on the use of "Start" programmes. "Start" has been almost as successful in Norway as in Sweden, where it originated. (See Section 7 for further details on "Start").

In the annual audience survey for 1977[4], which covered one week of radio listening and television viewing in the week 29th January to 4th February, 1977, there were two transmissions of "Start" television programmes, one on Saturday morning, at 9.30, the other on Tuesday evening at 18.25. About 2% of viewers (around 60,000) saw the Saturday transmission, and about 9% (around 270,000) saw the Tuesday evening transmission. Although differences were slight, and may be liable to statistical error, viewing was greater among women, particularly housewives, greater in the age-group 25 to 44, in densely populated areas outside Oslo, and was less in Østlandet than in other areas. There was also a broadcast of a radio programme for Start 2 on the Thursday evening at 22.00, which was heard by about 1% (somewhere between 15,000 and 45,000 people). This is very likely liable to statistical error, so further breakdown is not meaningful. It is clear though that the Tuesday evening television programme reached a substantial number of adults. The important role that television and radio played apparently in bringing the "Start" course to the attention of the public is further reinforced by a study carried out by Malmin[10], who in an analysis of a questionnaire returned by Folkets Brevskole correspondence students, found that two-thirds heard about "Start" through television and nearly half through radio (although Malmin pointed out the importance of printed information for following up the initial contact made by the mass-media).

With regard to school broadcasting, there are two main studies. The most recent study was carried out by Hasle and Seim[11], who examined the use of television in the basic school system (grunnskolene). Their information is highly reliable, being a census of all schools, with a very high response rate (93%). They found that at the time of the study (1975), 45% of grunnskoler had a television receiver. Of all schools, 9% had colour receivers, and 168 (5%) had video tape recorders. Thus over half the schools in Norway were unable to receive school television programmes. However, the distribution of

television sets through the country varied greatly, from almost 100% of the schools in Oslo, to 22% in Hordaland. This variation can best be seen by reference to the map on page 38. Even in schools which had a television, use was not high. For any single transmission, there were likely on average to be 90 classes viewing. Each programme (which would be transmitted two or three times) would be seen in one year by about 245 classes on average - or about 6 000 pupils. The highest viewing rate for any single series, for schools with television sets, within the class-levels at which the programmes were aimed, was 16%, or about 20 000 pupils. About a quarter of the series examined were used by less than a 100 schools, or by less than 5000 pupils.

The most recent study of the use of school radio programmes was carried out in 1970 by Handal[9]. Less reliance can be placed on the information from this study, due to the low response rate (43%) from a small sample of schools (377, or 10,5%). Handal himself considered that one consequence of the low response rate would be an over-estimate of the amount of technical equipment available in the schools, and that the survey would give a more positive picture of the use of radio in shools thatn of the actual situation that exists. The survey showed that nearly all responding schools had at least one radio, and 30% had two or more. Similarly, only 7% of schools did not have a tape-recorder, and only 6% did not have a slide projector. Interestingly, Handal comes up with exactly the same figure for schools with television receivers as Hasle and Seim (45%). Probably the increase in the number of schools with sets since 1970 has been balanced by the original overestimation of sets in Handal's survey. In the week covered by the survey, 10% of responding teachers made use of a radio programme in their class, either direct from transmission or from a recording. Handal concludes that programmes are underused, even though when they are used they are thought by teachers to be useful and satisfactory. More use needs to be made of tape-recorders, and greater use of multi-media programmes, combining tape-slides, or television and radio.

"% av skolene i hvert fylke som har fjernsynsutstyr.

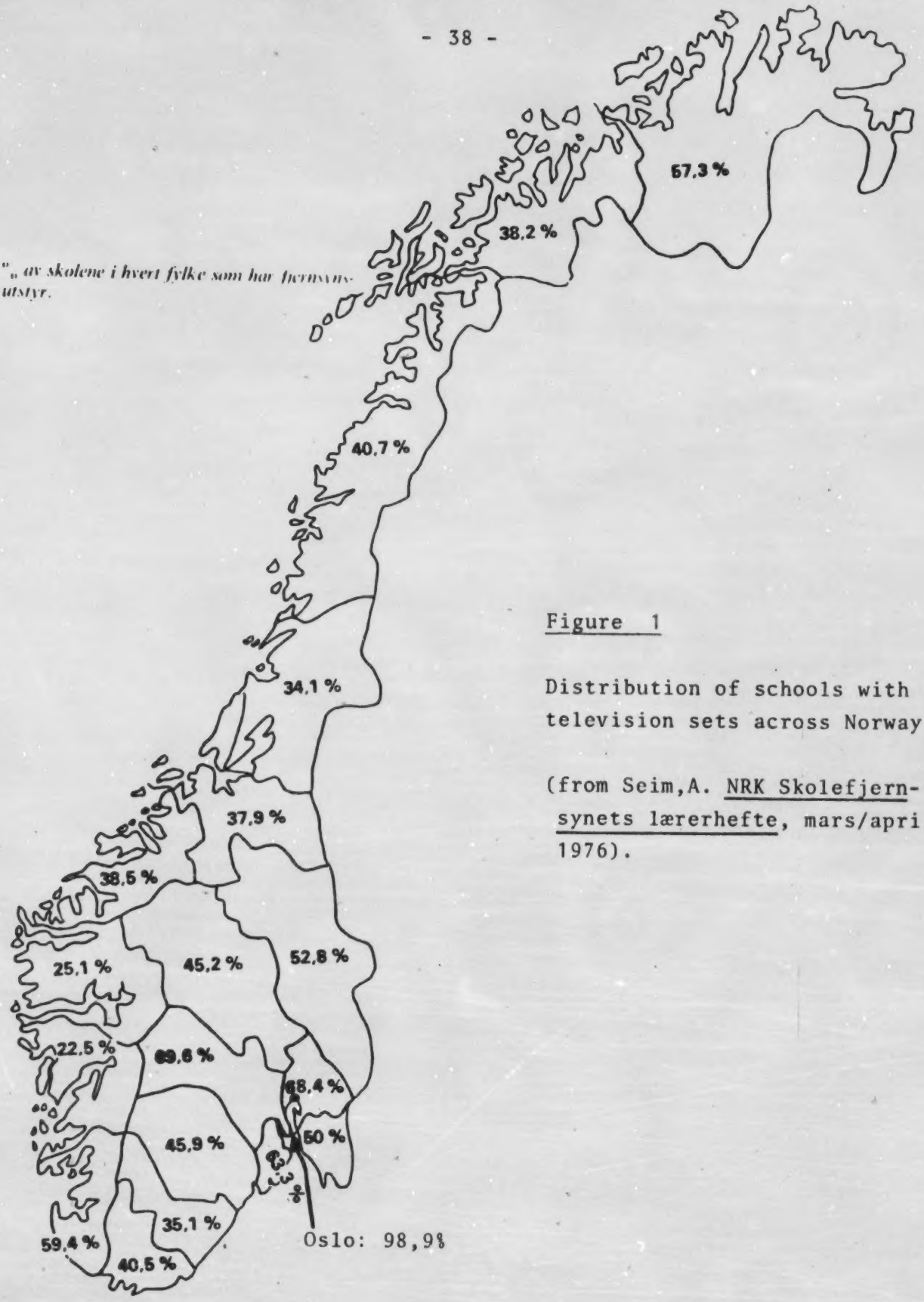


Figure 1

Distribution of schools with television sets across Norway.

(from Seim,A. NRK Skolefjernsynets lærerhefte, mars/april, 1976).

The Immediate Situation

With the setting up of the interimsstyret for NFU, a number of changes have taken place, and these will be important for the future development of distance education in Norway.

The interimsstyret drew up a draft agreement, which was sent to NRK for comment, before being submitted as part of the intermsstyrets report to KUD. This is seen in the Education Department of NRK as a viable starting point for detailed discussion. It has not been discussed within the education department of NRK, and there has been no agreement on NRK's side to anything of a detailed or practical nature, although it was not thought that there would be any real problems that could not be resolved.

In the meantime, NRK has had to press ahead with its plans for 1979, as follows:

Por Favor: This is a Spanish course, of British/German origin, which is being substantially adapted and changed for use in Norway. The pace is being slowed down, and there will be programmes on offer over a three year period from 1979-81. In the next 12 months, there will be 13 television and 13 radio programmes produced for the series. Each programme will have a repeat transmission. The adaptation is being carried out by language specialists hired by NRK. The programmes are being co-ordinated through Mediautvalget with other activities, such as correspondence tuition (tnrough NKS and Folkets Brevskole) and study circles (through Samnemnda).

Der du bor: This is another ecology series, comprising two television and a few radio programmes. This is also based on Swedish material, but NKI are providing a revised Norwegian version, together with correspondence tuition. First transmissions will be in January, 1979.

Children's Year: There will be two television programmes

next year as part of Children's Year, to be produced in conjunction with Mediautvalget, on children's literature.

There will be at least one more series, not yet decided, but which will be decided soon.

KUD, on the recommendation of the interimsstyret, has paid 230000 kr. for services to be carried out by NRK on NFU's behalf in 1978. The aim behind this payment, as agreed between NRK and the interimsstyret, was to provide sufficient resources for the appointment of three people, for one year, to work on the long-term planning of programme production for NFU, advice to NFU on the use of broadcasting for adult education, and to get production started for the first programmes." (Vedlegg 19).

NRK has advertised for these posts as follows:

One television producer: this post will be used to consolidate the person previously employed on a one-year contract.

One television script-writer: post to be filled by a new appointment.

One radio producer: post to be filled by a new appointment.

NRK need all three of these posts to meet the production requirements already decided by NRK for 1979. It is likely that both the script-writer and the radio producer will need to be trained. Given that Por Favor is scheduled to extend into 1981, it is likely that the commitment of these three staff will run into 1981. NRK consider that 1981 will be the first year when programmes specifically commissioned by NFU can be produced.

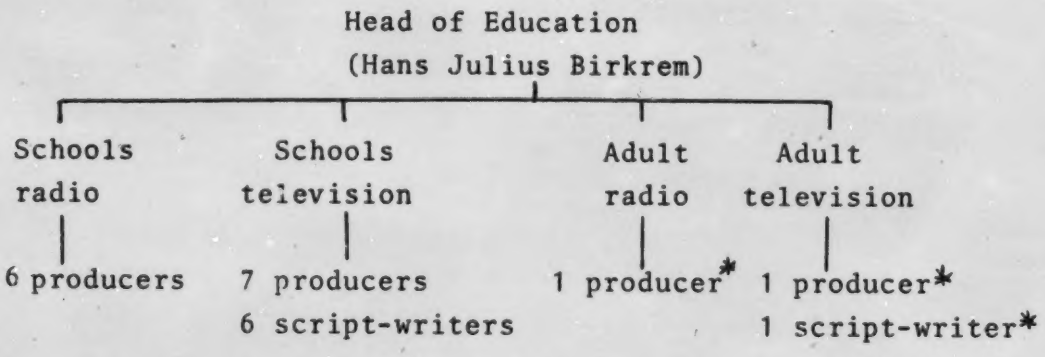
The normal production load for a television producer in schools is about 9 new or 15 adapted programmes a year, at a maximum. The equivalent figure for radio is 20 programmes a

year. Consequently, once these staff are trained, the three posts that NFU have paid for will provide the following yearly production output, at a maximum (excluding additional programme and technical costs):

9 new television programmes a year
20 radio programmes a year.

However, further, substantial expenditure will be needed before these people can produce any programmes (see pp.66-72).

Another important development during the year has been the reorganisation of the schools television and radio departments, under one single head, with overall responsibility for schools and adult education, as follows:



The Head of Education is the formal link with NFU. The above list of posts includes the three NFU-funded posts (*).

NRK's planning cycle operates on roughly a 12-18 month basis. Plans are discussed in August of one year for productions to be broadcast between August of the following year, and the Spring of the year after that. Plans have now more or less been finalised for programmes for the period August 1979 - April, 1980. If NFU wanted programmes for transmission from August, 1980 (the earliest now possible), it would need to have its proposals ready by August, 1979. Production would then begin between October, 1979 and continue through to at least January, 1980. Schedules and support

materials, for instance for schools, have to be ready for printing in February/March and distribution in May or June, for their use the following autumn, although exceptionally, plans for adult education programmes could be discussed at the latest at the end of 1979 for Autumn 1980 transmission.

Also during the year, a new copyright agreement was negotiated regarding the video recording of educational programmes. This is set out in a circular from KUD[12]. As with the preceding copyright agreement, the new agreement still only grants the right to make recordings for use as "learning aids for school teaching" (hjelpemiddel ved skoleundervisning). "School teaching" is also defined more narrowly than educational activities. It refers specifically to curriculum activities which take place in an organised form within State (public) and recognised private schools, which are carefully defined in the circular. The definition of school teaching also includes adult education courses leading to qualifications in subjects and levels also taught within the defined school system.

Specifically excluded from the right to make sound and video recordings are a defined range of higher education institutes, and (of particular relevance to NFU), adult education provision which does not lead to qualifications in subjects and levels covered within the defined school system. Study groups and correspondence study circles are named as not having the right to record.

Furthermore, even within those sectors which are allowed to record, the right is restricted to officially classified school broadcast programmes or other broadcast programmes of a primarily educational character. The circular points out that it is the programme's purpose, and not its use, which determines which programmes are of a primarily educational character. Such broadcasts must cover subjects and levels included in the school timetable. Thus the agreement specifically excludes the right to record programmes such as news, current affairs, political reportage, ordinary travel programmes, radio and television dramas, and so on.

The agreement further limits recording to schools, or to recording centres authorised by KUD. It points out explicitly that the term "school" does not cover community teachers' centres (kommunale pedagogiske sentra) - whether on a local, inter-community, or a county basis.This means that these centres must obtain specific authority from KUD's cultural department, and must pay a licence fee according to the levels agreed for recording centres. Recording centres which have been authorised to record radio programmes must still obtain authorisation to record television programmes. They must be registered as a video centre.

The circular points out that the agreement to record does not include the right to record or copy film or other media, but only material broadcast through television.

The question as to whether recording rights can be widened to cover educational activities other than those covered by school education and for programmes other than school and educational broadcasts is under consideration by a committee set up by the Ministry of Justice to revise the regulations on author's copyrights.

It has not yet been decided how the recording fee will be paid, or by whom. One suggestion is that KUD should pay a yearly lump sum to the various organisations concerned, on behalf of the schools.

TRANSMISSION

Television

Although there is a good deal of variation, there is nevertheless a discernible pattern in transmission times for television. The amount of transmission time can vary from day to day, but in 1975, it averaged about 6,5 hours a day. In 1977, there was about 190 hours of school television during the year, or about 6 to 6½ hours a week during school time, and about 29 hours of adult education programmes ("Start"). In 1978 there were 12 hours of adult education transmissions ("Det store samspillet").

Table 3 summarises the transmission pattern.

Table 3: Television transmission pattern per week

Weekdays

9.00 - 9.30	Children's TV (repeats)
9.30 - 13.00	Schools' TV
17.55 - 18.00	News
18.00 - 18.30	Children's TV
18.30 - 19.30	Miscellaneous: adult education; minority "serious"; repeats
19.30 - 22.45	Main programming

Saturday

9.30 - 10.00	Children's TV (repeats)
10.00 - 10.30	Adult education
13.00 - 16.30	Sport; miscellaneous; repeats
17.55 - 18.00	News
18.00 - 19.30	Children's and family programmes
19.30 - 23.15	Main programming

Sunday

13.00 - 16.30	Sport; film
18.00 - 18.50	Children's and family programmes
18.50 - 19.30	Religious programming
19.30 - 22.40	Main programming

Even within these times, there is often a good deal of unused transmission times. For instance, most of schools' television is broadcast on four days of the week. The Saturday and Sunday afternoon slots as listed are rarely fully used. There were only 12 adult education transmissions on Saturday morning during 1978. The most difficult slot to classify is the hour from 16.30 to 17.30. Apart from "Sports Round-up" on Monday (between 19.00 and 19.30) most of the time is devoted to "serious" minority programmes and/or repeats. It is between 18.25 and 18.55 when adult education programmes have been shown, but there are also programmes on topics like, for instance, environmental issues for children, abortion, and the impact of Christianity on art and literature, shown at this time. Repeats however take up more than half this transmission time (3 hours out of five, in a typical week). There is a good deal then of time that could be used for adult education programmes, both between 18.30 and 19.30 (possibly 2 to 3 hours a week), and on Saturdays and Sundays (possibly as much as 15 hours a week). There is therefore no shortage of potential transmission time for adult education programmes.

In a report from an internal NRK committee set up to look at the implications of the establishment of NFU[13], it was proposed that by 1981-82, NRK should make available up to 50 hours a year for adult education programmes, and up tp 60 hours a year for schools (including repeats). It is not clear from the report what the grounds are for these figures. There has been several developments since that committee met, so it is uncertain as to how much importance to attach to the proposals, especially since even these proposals presumably were dependent on adequate production resources being available as well.

In 1979, times for adult education programmes will be the same as for 1978 (18.25-18.50 weekdays, and 10.00-10.30 Saturdays). It is probably most accurate to say that NRK has not yet taken a firm position on transmission times for adult education programmes beyond 1979, and that NRK indeed would welcome suggestions from NFU on this matter, although NRK would need to know at least six months in advance of proposed transmission what times were required.

Satellites

There are at least two proposals for satellites which may affect Norway. One proposal is for a Scandinavian satellite satellite(NORSAT). The planning committee for this is due to report in June, 1979. The Norwegian government is expected to make its decision in 1980. If it approves the decision to come in on the satellite project with the other Nordic countries, the satellite could be in operation by 1985. A satellite would enable direct transmission to homes, via the satellite and a special dish aerial. However, it would require a new generation of television receivers, and the dish aerials would cost approximately kr.2000 each. Costs would be shared between the Nordic countries. Major political problems will need to be resolved, particularly if the satellite is used to provide a joint, Nordic TV-channel, containing Swedish and Danish programmes as well as Norwegian programmes.

The second proposal is for a European Broadcasting Union satellite, to be launched in 1982 for a period of four years, but strictly on an experimental basis for testing the hard-ware. The satellite will have two kinds of beam, one a wide beam which will provide a footprint over a whole area, and could be used for direct transmission to people's homes, the other a narrow beam which would be directed at a ground relay station, which would then use the terrestrial transmission network that already exists. However, the "footprint" cannot cover

all Europe, and will therefore be moved around every few months. The narrow beam could be available all the time. The earliest then that a satellite will be available in a form that can be used for educational purposes is 1985. However, even then use of a satellite for educational purposes will depend on the speed at which Norwegians are willing to buy new sets and dish aerials. It seems safe to assume then that satellite television is not a serious proposition for distance education in the next 10 years, especially as there is already in Norway plenty of spare transmission capacity on the ordinary network.

Radio

The amount of transmission time for radio programmes is about 17,2 hours a day on average. In 1977 there were 130 hours of school radio during the year, or about 3 to 4 hours a week during school time, and about 16 hours of adult education programmes. In 1978, there were 13 hours of adult education transmissions ("Start" and "Det store samspillet").

There is less of a regular transmission pattern for radio. In any case, the second radio network, P2, will open in 1980. This will mean that there is once again plenty of available transmission time for both schools and adult education programmes. The internal NRK committee[13] also suggested a total of 120 hours transmission for schools in 1981-82 (one transmission only) and 180 hours for adult education programmes (including repeats). Again, the basis for this suggestion is not clear.

Work Patterns and Utilisation of Radio and Television.

It can be seen that there is a wide range of times from which to choose for adult education programmes. At the same time, it is important that adult education programmes are at worst transmitted at times when most of the potential audience is home, and at best at times that are really

convenient. At the same time, it is desirable for those - the majority - who do not wish to participate in adult education activities that there is as little interruption as possible to normal programmes.

Using therefore the latest research on general viewing and listening figures[14], and combining these with figures from an enquiry carried out by the Central Office of Statistics on the use of time[15], it is possible to identify times at which people are home, and possibly free of other activities, which do not clash with extensive use of television and radio by the general public.

Viewing and Listening Figures: Figure 2 shows viewing and listening figures for a typical weekday evening (Monday, 31st January, 1977). Not all times during the day are shown. The broken line indicates listening figures, and the continuous line viewing figures. It can be seen that, in general, listening figures are low. The peak time for radio is between 16.45 and 19.00, climbing at its peak to 36%. The numbers listening after 19.00 are very small (less than 8%). Television is much more heavily used. Viewing before 18.50 is slight (less than 12%), climbing to about 20% between 18.50 and 19.30 ("Sports Round-up" on the Monday is the most popular programme at this time on weekdays). It then increases sharply to about 60% of all adults in Norway, for the news at 19.30. The pattern then varies more, depending on the programming on the evening. It can drop below 15%, even at peak times, but a good film may attract up to 60% during the week, right up to close-down at around 22.30.

At week-ends, the pattern is rather different. The peak time for radio on Saturday is between 9.00 and 10.00, and between 15.00 and 16.00, but again does not increase beyond 33%. Very few people (less than 100000) are listening between 21.00 and 22.00 on Saturday. (Figure 3). There is less listening on a Sunday, the peak (about 20%) being in the morning. Again, listening is very low in the evening.

Monday : 31st January, 1977
(Source : Statistisk sentralbyrå, Oslo)

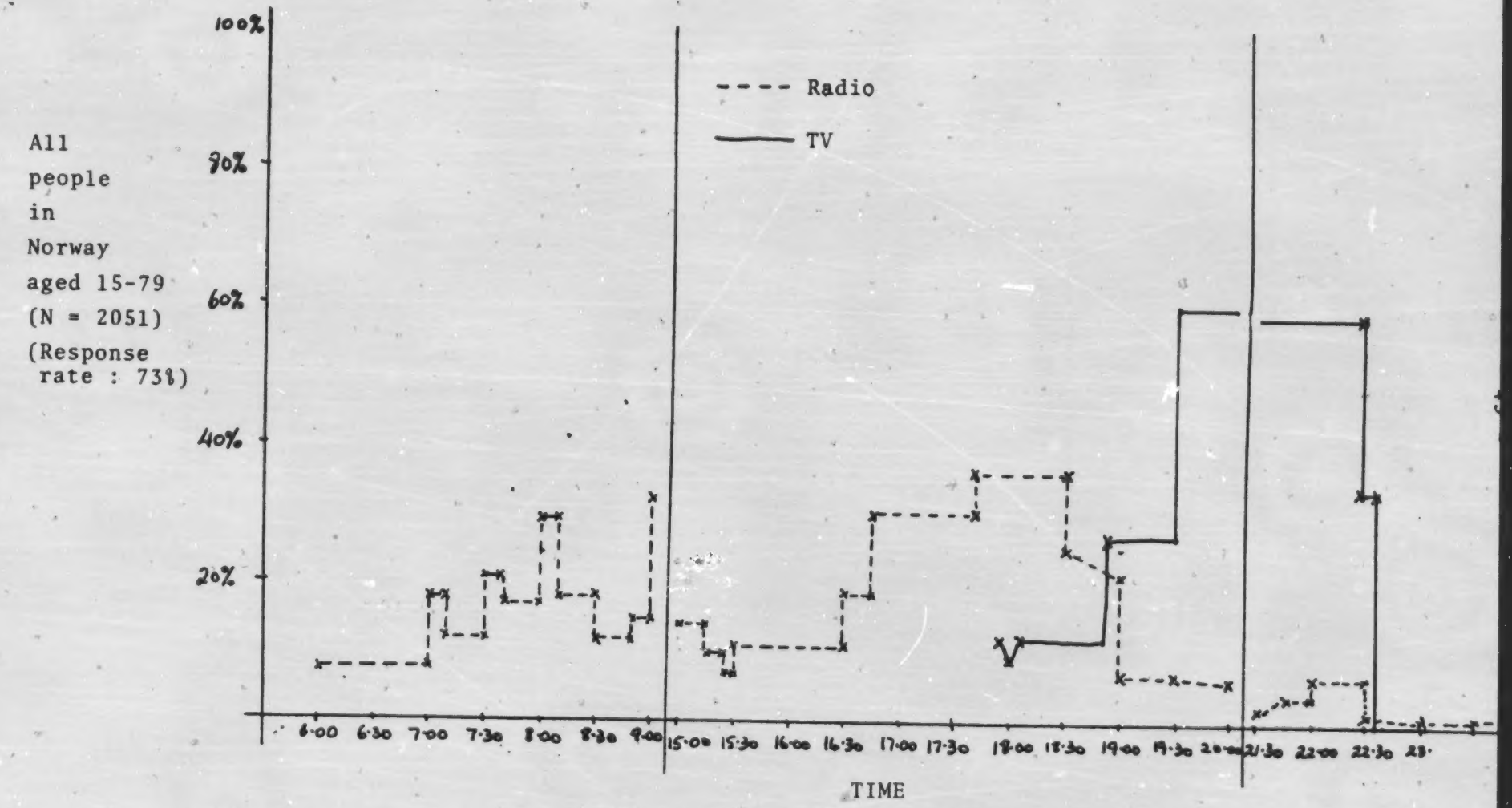


Fig. 2. VIEWING AND LISTENING FIGURES FOR NRK PROGRAMMES

Saturday : 29th, January, 1977
(Source : Statistisk Sentralbyrå, Oslo)

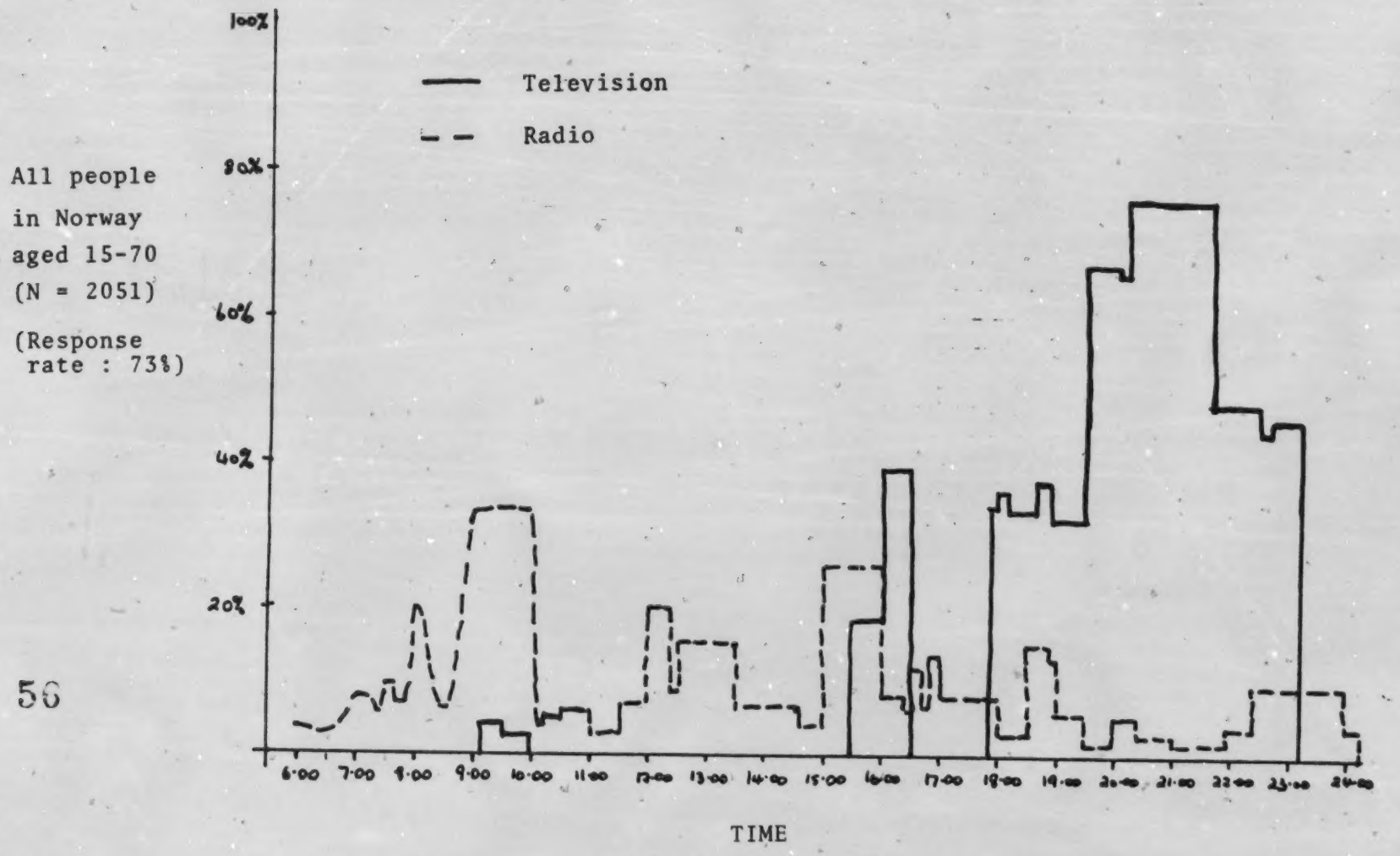


Fig. 3. VIEWING AND LISTENING FIGURE FOR NRK PROGRAMMES

Sunday: 30th January, 1977
(Source : Statistisk Sentralbyrå, Oslo)

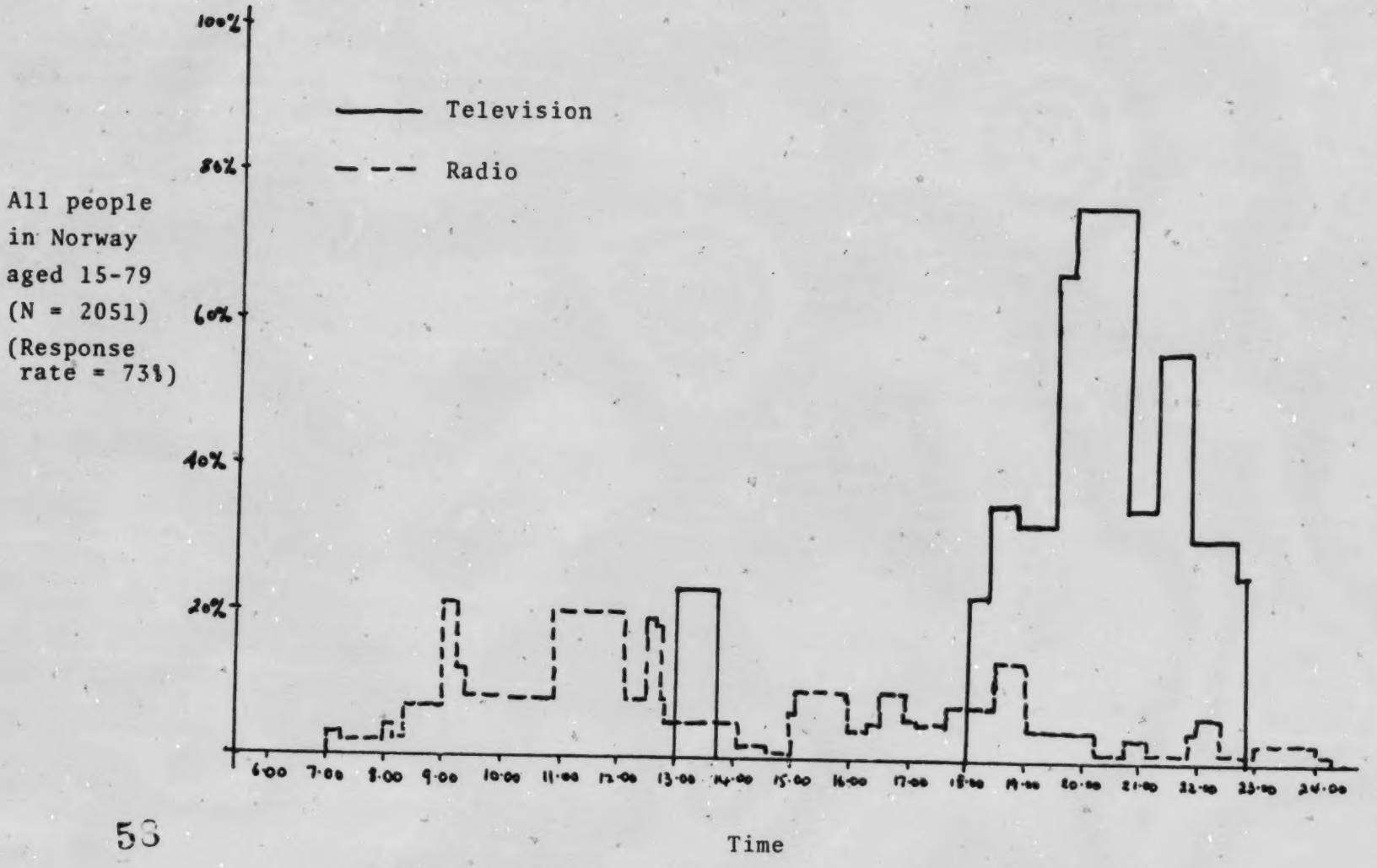


Fig. 4. VIEWING AND LISTENING FIGURES FOR NRK PROGRAMMES

1971/72

(Source : Statistisk sentralbyrå, Oslo)

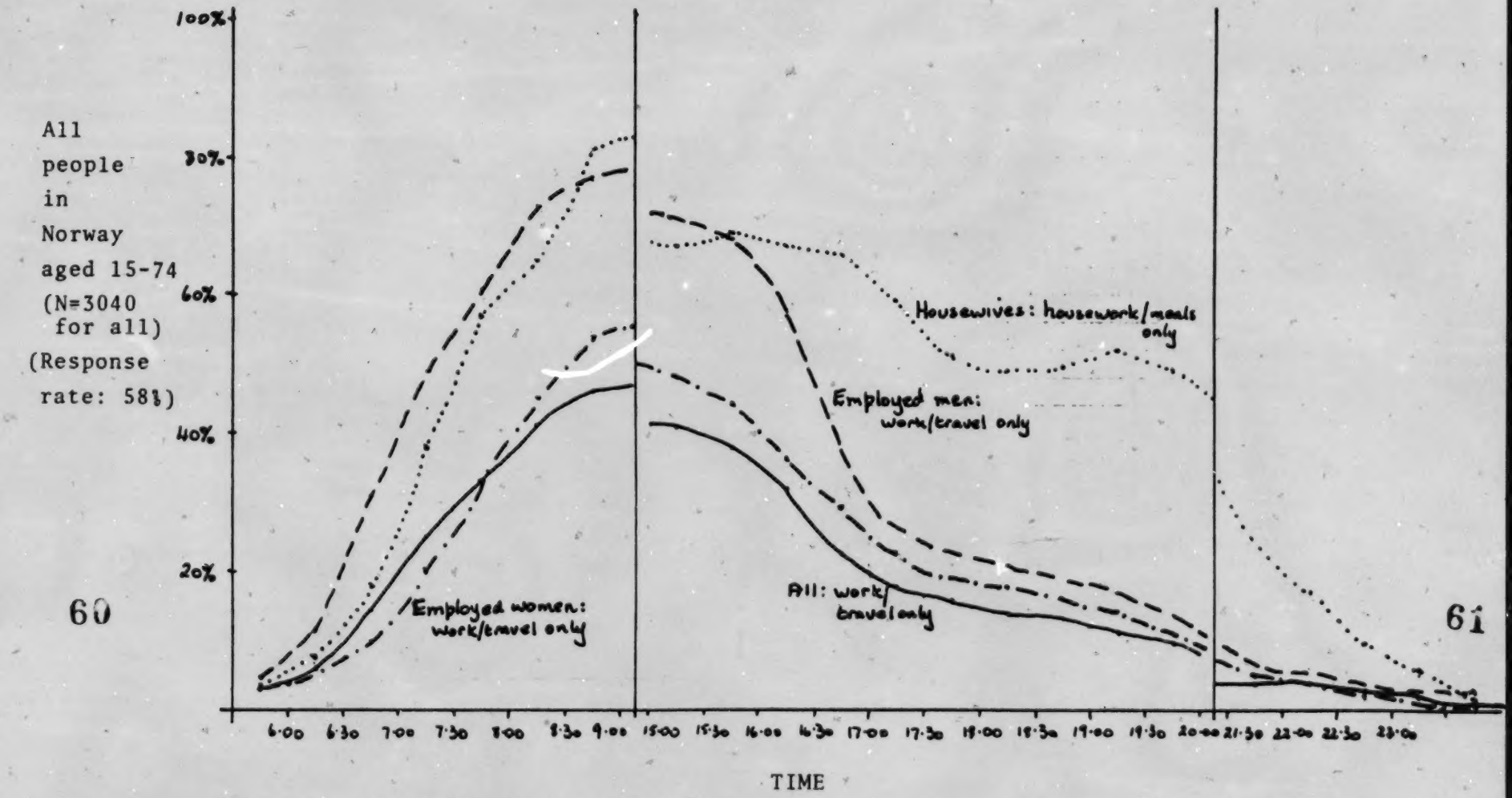

All people in Norway aged 15-74 (N=3040 for all)
(Response rate: 58%)
100%
80%
60%
40%
20%
Employed women: work/travel only
Housewives: housework/meals only
Employed men: work/travel only
All: work/travel only
6·00 6·30 7·00 7·30 8·00 8·30 9·00 15·00 15·30 16·00 16·30 17·00 17·30 18·00 18·30 19·00 19·30 20·00 21·30 22·00 22·30 23·00
TIME

Fig. 5. TIMES AT WORK : WEEKDAYS

1971/72

(Source : Statistisk Sentralbyrå, Oslo)

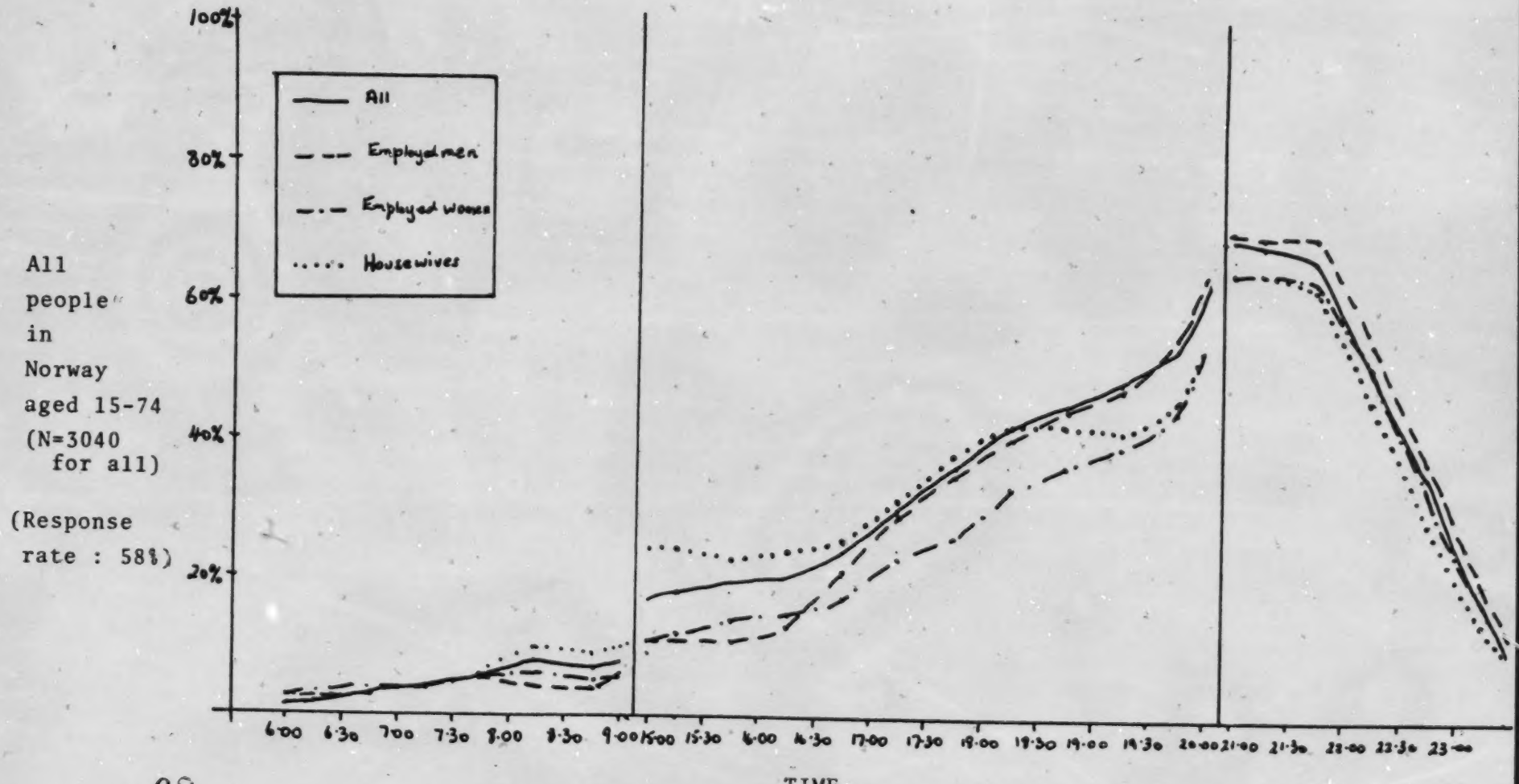


Fig. 6. FREE TIME : WEEKDAYS.

1971/72

(Source : Statistisk Sentralbyrå, Oslo)

All people in Norway, aged 15-74 (N=3040)

(Response rate = 58%)

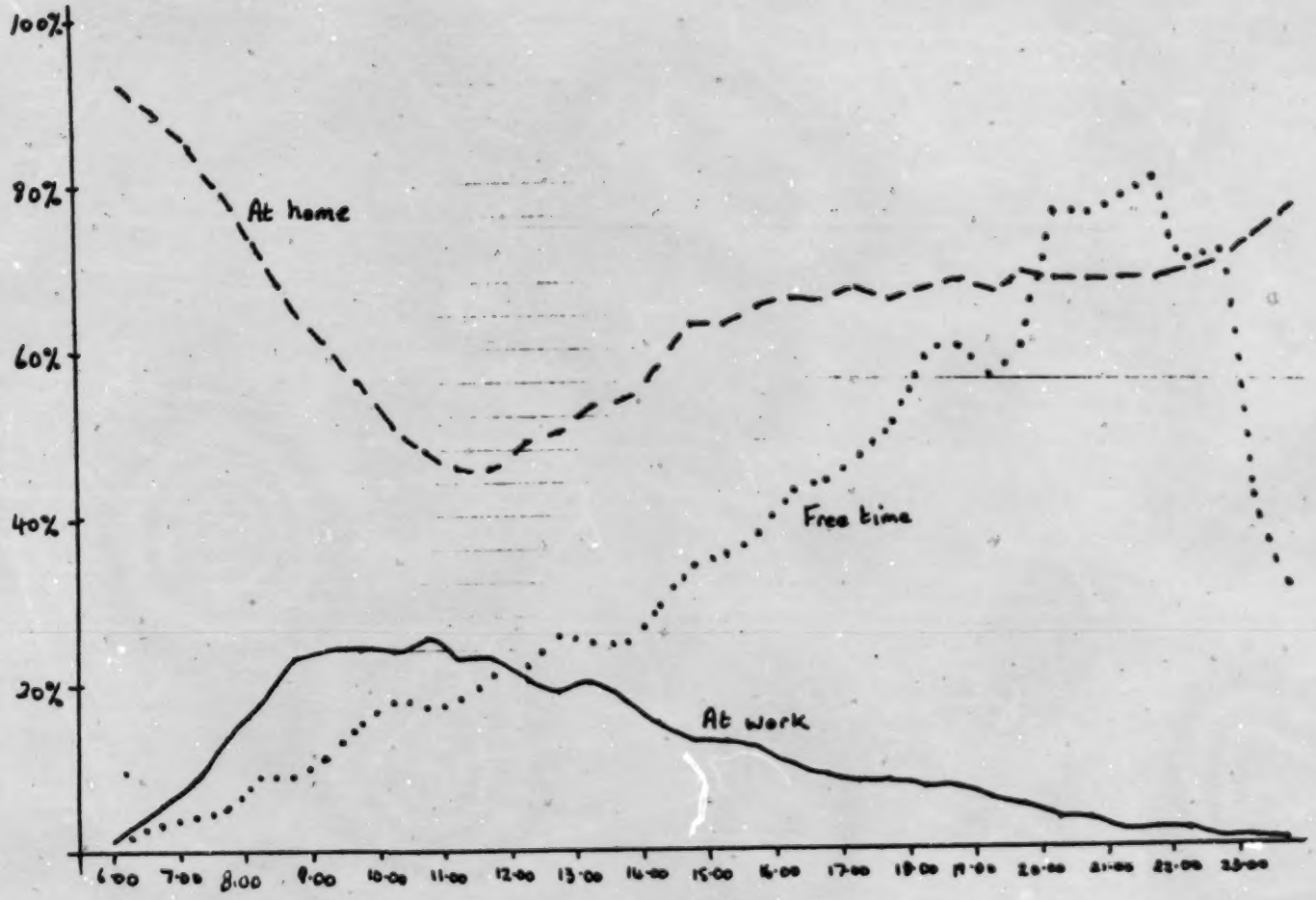


Fig.7. FREE TIME AND TIME AT WORK : SATURDAY

1971/72

(Source : Statistisk Sentralbyrå, Oslo)

All people in Norway aged 15-74 (N=3040)

(Response rate = 55%)

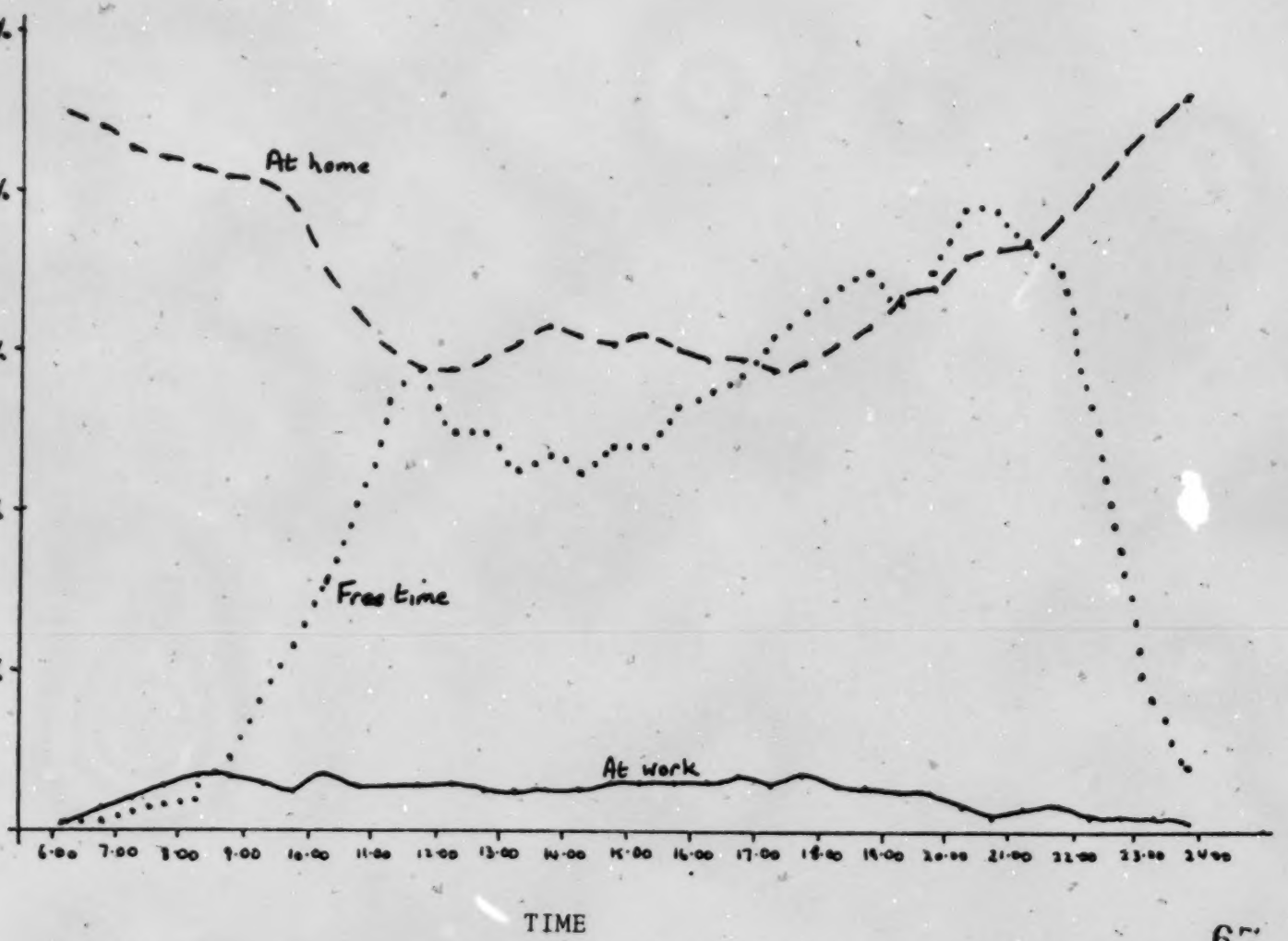


Figure 8. FREE TIME AND TIME AT WORK : SUNDAYS

The pattern for viewing at weekends is similar to weekdays, except that if anything, viewing is greater, sometimes reaching as high as 75% of all adults; and even though programmes end a little later (around 23.00), viewing figures stay high until the end. Sports programmes in the afternoon also draw high viewing figures. (Figures 3 and 4)

Times at Work During Weekdays: The "use of time" figures need more careful analysis. These were collected over a period of one calendar year from September 1st 1971 to August 31st 1972, each individual sampled filling in details for a period of two or three days. Figures have been averaged out over the year, and so tend to be distorted for some kinds of activities. For instance, the effect of holidays will have depressed the figure for people at work at any one time, when people are working. Nevertheless, the pattern of time activities is still valid. Figure 5 shows the times at which people in different categories were engaged in work activities (including travel to and from work). Soon after 6.30, people begin to get engaged in work activities, and by 8.15, those who are to be engaged in work activities will nearly all be on their way or already at work. Return home from work is more spread out, but three-quarters of employed men and women are home by about 17.00, although even at 20.00, there are about 10% of employed men and women still engaged in work activities. At least half the housewives are still engaged in housework or meal activities at 20.00.

The reverse of this picture is Figure 6. This shows times when people are free of not only work activities, but also of personal care and sleep, household work and family care, and meals. In other words, it is time given over to leisure and other activities (including, incidentally, study). The relevant point about this graph is the fact that there are no times during the week when even three-quarters of the adult occupation are totally free of work or household activities. People of course have more control over when they will eat, go to bed, put the children to bed, and so on, than they do over what time they will go to and get home from work, but even so, between

17.00 and 19.30, up to one third are engaged in either work or household activities.

Free Time and Time at Work - Weekends: Not surprisingly, people have much more free time at weekends. Free time hits a peak on Saturday and Sunday evenings, although over half have free time on Sunday afternoons as well. Very few work on Sundays, but over 20% are at work on Saturday mornings, and combined with shopping and other outdoor activities, the number at home on a Saturday morning around 11.00 is less than half. (Figure 7).

The implications of these graphs for transmission times for adult education programmes are discussed later.

Co-operation between NRK and NFU

Programming policy: NRK believes that it is essential that their experience be used for the planning of educational television and radio programmes. Thus NRK wants to be involved in both the pre-project and project planning groups. NRK wants its views about what is and is not possible through the use of television and radio to be given full consideration. If producers are not fully involved in determining the planned use of television and radio programmes, it will be difficult to get them interested in the actual production of the programmes. They do not want to be technicians. NRK producers will also want to produce teachers' notes, but the writing of other support printed material by producers will vary, according to circumstances. However, the extra time required for consultation and discussion of programmes for a multi-media course will probably mean that producers will be unable to produce as many as nine programmes a year for television, or 20 for radio.

Ideally, NRK would like to put forward suggestions for programme series to NFU. From NRK's list, NFU would order them in priority, and go back to NRK with recommendations. It was thought that NFU has a valuable and important role to play in providing advice on adult education needs (schools

broadcasting was thought to be less of a problem). What NRK would welcome from NFU is advice, backing and confirmation of NRK's proposals. It was fully accepted that there would probably be NFU-backed courses without a broadcast component. Also, NFU would be welcome to put up its own proposals . .

Staffing: NRK wants at least seven more people to be appointed from April, 1979, for educational programming. The most urgent necessity was for an economic administrator for the department, to cover both schools and adult education programming. Four more producers were needed for the schools department and at least two, preferably four, for adult education. None of these can be appointed out of NRK's budget.

Education production staff should be based in Oslo, for close contact with NFU. It may be possible to base one producer in Tromsø, but it would be very difficult, since such a person would have to be concerned with programmes about Northern Norway, although there would be no obstacle to using Tromsø production facilities if required. The report by the 1977 committee (NRK) recommended that by 1982, half the schools radio producers should be based in the regions, but adult education radio producers should be based in Oslo.

Costs: NRK proposes to charge NFU on the following basis:

Television: 115 000 kr. per hour of transmission
Radio: 17 000 kr. per hour of transmission

These figures are based on costs prepared for NRK's committee on fjernundervisning in 1977[14]. Then, an average programme cost around 84 000 kr. Since they are based on costs at January, 1977, the figures quoted will probably be liable to a 10% increase to cover inflation since then. The quoted figures have though been adjusted to take into consideration the greater use of repeats in educational programming.

The average programme budget for a television programme at NRK is about 40 000 kr. per programme, and about 4 000 kr. for radio. These figures however cover only direct expenses incurred in making the programme, such as the cost of film stock and processing, travel, fees to contributors, etc. They do not include technical costs, producers' salaries, or NRK's administrative and capital overheads. However, the proposed hourly rate based on the amount of transmission time used covers all charges to NFU, including programme budget, producers' salaries, overheads, etc. Thus, from NFU's point of view, each time there is a transmission of one of its commissioned programmes, there will be a direct cost of, for television, 115 000 kr. an hour, at a pro-rata rate. Therefore, if a programme is transmitted twice in one year, and also shown twice again the following year, and the programme is of 20 minutes length (1/3 of an hour) the charge to NFU will be 4 x 1/3 x 115 000 (plus probably an adjustment for inflation), for that programme.

NRK wants to transfer all educational broadcasting costs to NFU eventually, including school broadcasting costs. In 1977, according to the Statsbudsjett[9], programme expenditure on schools television was 2 430 000 kr. and 1 014 000 kr. on schools radio. By 1979, it will be an estimated total (radio and television) of 3 960 000 kr. NRK has suggested that the transfer to NFU's budget should be done progressively, 20% per year, over five years. In the meantime, NFU is being asked to pay for the adult education programming already planned for 1979, a total of 200 000 kr.

COMMENTS AND CONCLUSIONS

1. Potential value of broadcasting for distance education

It is worth at this point to make my own position clear about the role of broadcasting in distance education in Norway. I believe that television and radio have a vital, even essential role, to play. I do not intend here to go into the relative educational advantages of television and radio over other media in a distance education system. There is now though sufficient evidence to indicate that, in the right circumstances, television and radio are better equipped to carry out a substantial number of important teaching functions than other media in an integrated, multi-media distance teaching system[16,17,18]. It is also true that well-motivated learners can learn through any medium, and that other media, particularly print, and personal contact, have just as important, if not more important, educational roles to play than broadcasting. It is clear though that from examples such as the Open University in Britain, Children's Television Workshop in the U.S.A., and the Indian Satellite Instructional Television Experiment, broadcasting can be a powerful educational tool, in the right circumstances.

The qualification though is important. There are enough disasters in the use of television and radio in education scattered around the world to demand a cautious and circumspect analysis of the potential of broadcasting in Norway, for the purpose of distance education. At the same time, it seems clear to me that broadcasting ought to be capable of playing a major role in Norway, for a number of reasons.

First of all, it seems that broadcast television is likely to be the only way by which audio-visual materials can be brought to substantial numbers of adult learners in Norway, for at least the next 10 years. We shall see in Section 5 that there is no adequate alternative distribution system for video in Norway at the moment, and that it will take time and a good deal of money to build up such a system. However, television

and radio have the capacity to reach into almost every home in Norway. Transmission coverage now is almost 100% of the country, and almost all homes have both a television and a radio set. There is a powerful, substantially financed, highly professional State broadcasting system, with sufficient technical production resources and spare transmission time for distance education use. From the experience of "Start" in Norway, it is clear that television has the power to attract large numbers into adult education courses. Although then the potential of television, and perhaps to a lesser extent, radio, may appear obvious, it needs to be stated, because I believe that there still remain a number of serious difficulties to be overcome before this potential for distance education can be fully exploited in Norway.

2. The need for a policy for educational broadcasting.

It is my belief that the biggest obstacle to a succesful use of broadcasting for distance education in Norway is the lack of an overall policy towards educational broadcasting, both at governmental level, and within NRK. The setting-up of Norsk fjernundervisning has not resolved this issue. In particular, the prospects for school broadcasting are as uncertain and indefinite today as they were 10 years ago. NFU has a clear government mandate to give adult aducation priority, for at least the first five years. However, existing educational broadcasting staff are located in schools broadcasting, without a clear mandate, while there is a block on new appointments, at least in the Oslo area, from NRK's own budget. With the mandate set for NFU, it is clear that even if the principle of NFU funding NRK production posts is extended, this will only benefit the adult aducation area, and it will take some time before this area reaches the strength in numbers of the school broadcasting departments. Internal pressure from within NRK though is likely to come mostly from the schools sector.

The potential for the use of broadcasting for distance education then has to be seen against the general background

of educational broadcasting in Norway, and this background is not altogether satisfactory. Because of the need to wait for developments with regard to Norsk fjernundervisning, there has been no growth in schools broadcasting, and possibly little development, for 10 years now. The failure to increase or even maintain levels of production in the schools area, the failure to improve and strengthen links with the educational service, the almost total lack of programmes in the adult education field over the last 10 years, the wish to transfer all costs to NFU, all suggest implicitly a lack of commitment to educational broadcasting by the management og NRK, although publicly it has continued to declare its commitment. At the same time, the desire to control policy over programming, even in the context of NFU, by NRK seems inconsistent with the desire for the education sector to pay all the costs. This state of uncertainty, the hesitation towards committing itself towards a clear policy, is of course a direct result of the uncertainty about the eventual role and form of NFU. Now this has been resolved, the next step must be to decide a policy for school broadcasting, as well as for adult education, to enable NRK to provide the services which NFU wants in the adult education sector. The resolution of such a policy seems to me to be more than just an internal matter for NRK, but should also require extensive involvement from the various sectors of the educational service.

The reason why a general policy embracing both schools and adult education is required before NFU can get the most benefit from NRK's services can be seen if some of the policy options for schools broadcasting are examined a little more closely:

a. Closing down the school broadcasting service. If adult education is the real pricrity, then staff in the schools sections could be transferred to adult education programmes. This would seem to me to be too drastic a step to be seriously considered. Before this happened, there would need to be a full enquiry, involving educators as well as broadcasters, to determine that not only had the present service been of no value to education, but that it did not even have the potential to be of service. However, closure of the service would be better than killing it

by neglect, which would be the logical consequence of ensuring that all new resources and developments go into adult education.

b. NRK's responsibility. A second alternative would be improvement of the service within the existing structural arrangements. The service would be paid for out of NRK's own budget, derived from licence fees. KUD would make it clear that as a public broadcasting service, NRK was expected to provide a viable school broadcasting service out of its own income (as for instance must the British broadcasting organisations), and was expected to strengthen its links with the schools, if necessary employing both more production staff, and appointing for the first time field support staff. This apart, NRK would be free as now to determine its own programme policy.

Adult education programmes might take two alternatives within this option. The first would be for adult education programmes to be determined by NRK in exactly the same way as school programmes, with NRK paying for the cost, and possibly co-operating as now with other organisations through Media-**utvalget**. In this version, if NFU wanted a broadcast component for its own courses, it would need to get NRK to agree, and to pay the full cost to NRK.

The second version would be for NRK to have sole responsibility for schools, but for NFU and NRK jointly to be responsible for adult education programmes, along the model set by parliament, with NFU paying the costs.

The problem with this overall potion is that it is difficult to see how this would differ very much from the present situation. KUD would have no powers to force NRK to adopt closer links with schools, to increase expenditure on school broadcasting, and so on, and the division of responsibility between schools and adult education policy would still exist, though with NFU having to battle against NRK's own priorities. However, a clear decision to divide responsibilities in the way proposed would be better than the present state of uncertainty.

c. The Government's responsibility. Under this option, all educational broadcasting becomes directly a part of the State educational system, with NRK responsible for the production and transmission of programmes, carried out on behalf of KUD, and paid for out of KUD's education budget. KUD or an agency appointed by KUD, such as for instance NFU, would be responsible for policy, priorities, and for integration with the rest of the educational system, both for schools and adult education. NRK would be paid the full cost of production and transmission, but would be staffed and produce programmes according to the priorities laid down by KUD or its agency.

The advantage of this system is that there would be a coherent policy for all sectors of educational programming, it would be more clearly linked to the needs of schools and adult education, and policy would be determined by those who are paying for it. The disadvantages would be that it would require a good deal more government expenditure than is likely to be acceptable under present economic conditions, and NRK would lose a good deal of control over programming policy, in terms of setting priorities, which may not be professionally acceptable. Whatever option is chosen, however, considerably more money will have to be spent in order to get a more useful and relevant schools broadcasting service. In particular, money needs to be available for improving links with the schools.

I do not see it as part of my brief to suggest the "best" option. I will also understand if politicians, NRK and KUD are reluctant to begin once again another round of discussions on educational broadcasting. It is clear though that the establishment of NFU, on its own, will not resolve the question of a policy for educational broadcasting generally (i.e. including schools), unless its mandate or its priorities are changed; that the state of schools broadcasting today is not satisfactory and needs to be improved; but that to do so will need a substantial increase in expenditure, either by changing priorities within NRK, or by transferring and increasing expenditure through the State education budget. Unless a definite policy decision is agreed on this matter between KUD and NRK, I foresee continuing

difficulties between NRK and NFU, with NFU being expected to pay for services which it has not been mandated to give priority to, and with NRK being expected to provide services for which it has no resources or policy.

3. Working with NFU

a. Projects and pre-projects. It is difficult in the absence of an actual project to forsee exactly how pre-project and project groups will work. Most of the organisations I discussed the matter with believed it was important that the pre-project group membership should be as neutral as possible, representing neither individual organisations within a media (e.g.from a publishing house) nor representing some media rather than others (e.g.correspondence education but not publishing).

At the same time, most organisations, and NRK in particular stressed the need for professional organisations to be fully involved in discussions before any final decision was made by the pre-project group about choice of media for any given project.

For this reason, it appears that NRK wants a representative as of right in each pre-project group. If this is correct, though, one might expect all the other organisations representing different media areas (publishing, correspondence schools, voluntary organisations, Statens fimsentral, etc.) also to demand automatic representation on pre-project groups. It seems to me that either the pre-project group is completely neutral, made up of subject experts and NFU educational staff, or all likely media organisations are represented. The latter though does not seem practical. Quite apart from the "producer" representatives swamping in numbers the representatives from the subject areas, it is easier for some media areas (like NRK) to agree to a single representative than for others (like correspondence schools).

At the same time, it is vital that the pre-project gorup makes its decisions on the basis of a full understanding of the potential and limitations of each medium, and the practical and financial implications of using the various media. I believe the anxieties of NRK can be adequately met if each pre-planning project group calls on representatives of each of the different media areas to meet with the group - perhaps several times - to put forward plans, porposals, costs, timetables, etc, before the pre-project gourp makes a final decision, but that the final recommendation on the media mix, and the institutions to be asked to participate, must remain with a completely neutral pre-project group.

I have assumed that any organisations chosen to participate will automatically be fully represented in the full project group.

b. Finance. From the figures provided, it is possible to calculate costs for different numbers of programmes per year, in the adult education sector (costs for all aspects of a project are calculated and summarised in Section 11). To obtain some idea of likely costs, I have made certain assumptions:

i. Each programme will be 20 minutes in length.
ii. Each television producer can produce 8 programmes a year; each radio producer can produce 16 programmes a year.
iii. Television costs are 115 000 kr. per hour of transmission (with a possible 10% increase to allow for inflation = 126 000 kr. per hour).
iv. Radio costs are 17 000 kr. per hour of transmission (with a possible 10% increase to allow for inflation = 18 700 kr. per hour).
v. Each programme is repeated (transmitted twice) each year.
vi. Programmes will be broadcast each year for a period of four years.

Table 4 (over) indicates costs for different levels of production each year. Such a calculation also indicates staffing levels and transmission time required for given levels of production. Thus if we assumed that a course of approximately 16 weeks duration was to have 8 television programmes and 16 radio programmes, each repeated in the same week, and that the course was to last for four years, with the programmes transmitted each year, we get the following figures, for the first year:

First year: television: 608 000 kr. (+10% inflation = 672 000 kr.)
radio: 181 000 kr. (+10% inflation = 199 000 kr.)

However, it becomes more complicated the second year. The first year's programmes will be repeated, and, assuming the same staffing level, another 8 television and 16 radio programmes will be produced and transmitted. Again, without any increase in staffing, by the fourth year of production, there would be 32 television and 64 radio programmes produced, requiring 21 hours 20 minutes transmission time a year on television, and 42 hours 40 minutes on radio, providing sufficient programmes for at least 4 courses a year, at a cost of 2 432 000 kr. (2 688 000 kr. with inflation) for TV and 725 000 kr. (798 000 kr. with inflation) for radio. It will be noted that on the same assumptions, costs remain the same in the fifth as in the fourth year. This is because production has reached a steady state, since the first eight programmes produced in 1981 will be replaced by e new series of eight programmes, if each course is to last four years, and so on each year from 1985 onwards.

If these assumptions are maintained, then, and if the staff already hired on NFU money are to continue to be employed, it will cost NFU a total of 3 486 000 kr. per year, and provide resources for at least four courses per year to have broadcasting resources, by 1985, at 1978/9 prices.

If on the other hand production staff for NFU-linked programmes were to be increased to 3 television producers, 3 script-writers and 3 radio producers, NRK would be able to

Table 4 : Estimated costs for Television and Radio, 1981-1985 (Adult Education)

No. of new productions each year	No of hours TX (with repeats) 1981 Cost	No. of hours TX (with repeats) 1982 Cost	No. of hours TX (with repeats) 1983 Cost	No. of hours TX (with repeats) 1984 Cost	"STEADY STATE" No. of hours TX (with repeats) 1985 Cost	No. of programmes TX each year (repeats)	No. of courses (8 TV 16 radio per course)
Television							
8 (+10%)	5 hrs 20 mins 608 (672)	10 hrs 40 mins 1216 (1344)	16 hrs - mins 1824 (2016)	21 hrs 20 mins 2432 (2688)	21 hrs 20 mins 2432 (2688)	32(64)	4
16 (+10%)	10 hrs 40 mins 1216 (1344)	21 hrs 20 mins 2432 (2688)	32 hrs - mins 3648 (4032)	42 hrs 40 mins 4864 (5376)	42 hrs 40 mins 4864 (5376)	64(128)	8
24	16 hrs - mins 1824 (2016)	32 hrs - mins 3648 (4032)	48 hrs - mins 5472 (6019)	64 hrs - mins 7296 (8064)	64 hrs - mins 7296 (8064)	96(192)	12
Radio							
16 (+10%)	10 hrs 40 mins 181 (199)	21 hrs 20 mins 363 (399)	32 hrs - mins 544 (598)	42 hrs 40 mins 725 (798)	42 hrs 40 mins 725 (798)	64(128)	4
32	21 hrs 20 mins 363 (399)	42 hrs 40 mins 725 (798)	64 hrs - mins 1088 (1197)	85 hrs 20 mins 1451 (1596)	85 hrs 20 mins 1451 (1596)	128(256)	8
48	32 hrs - mins 544 (598)	64 hrs - mins 1088 (1197)	96 hrs - mins 1632 (1795)	128 hrs - mins 2176 (2394)	128 hrs - mins 2176 (2394)	192(384)	12

offer by 1985 96 television programmes and 192 radio programmes per year, enough for at least 12 courses a year, at a total cost of 10 458 000 kr. per year, for the broadcasting component, at 1978/9 prices.

On the assumptions made, it can be seen that each course will cost about 870 000 kr. a year, over four years, for the broadcasting component (at 1978/9 prices).

Of course, if the assumptions are changed, so too are the costs, so it is worth taking a closer look at some of the assumptions. It is very important for production staff to be fully employed and to have a clear production target and security of employment. The recruitment of production staff then implies a desired minimum level of output. Furthermore, in the kind of system planned for NFU, which relies on the development of multi-media courses in co-operation with a number of different organisations, it is essential that NRK has a core of staff experienced in this kind of production. Contract employment can help in an emergency, or to iron out wrinkles in production loads, but it is not a satisfactory base for long-term commitments or for forward planning. Thus the number of productior staff emloyed (or not employed) to work specifically on NFU-linked programmes is one of the main determinants of the amount of broadcasting that can be made available (and vice-versa).

Secondly, if good integration and full development of media is to be achieved on multi-media courses, each media component must have roughly the same length of life. It is no use the programmes lasting one year, then stopping, if the texts and correspondence tutoring is to go on for several years. The economics of distance education means that a very much greater part of the costs goes into the initial design and production of materials, and comparatively small amounts in the running and maintenance of the course, once designed, than in conventional teaching. Because then of the high initial design costs, it really pays to run the course for several years. For that reason, the programmes - which themselves have a high initial cost - should also be available for several years.

Although for those not used to broadcast costs the figures may appear high, they are very reasonable. The most meaningful average cost is for the steady state situation. Then, the average cost of a programme, including four transmission years and a repeat transmission each year, would be 84 000 kr. and for a radio programme 12 472 kr. This compares very favourably with the costs of Open University programmes in Britain, which, in 1976, were £12887 (128874 kr) for television, and £1750 (17500 kr) for radio (including transmission). Allowing for the effect of inflation in Britain since 1976, and differences in salaries, etc., the NRK charges compare extremely well with the British costs.

On the other hand, while the costs may be reasonable in broadcasting terms, it will be expensive to provide a broadcasting component. For instance, to provide 12 different courses with 8 television and 16 radio programmes each - not an overambitious target - will cost over 10 million kroner a year for the broadcasting component alone.

The figures also indicate some of the implications of NRK's request for NFU to take over the school broadcasting budget. Current expenditure, on NRK's budget, is just under 4 million kr. for television and radio combined (excluding sales of printed materials, which are more or less self-financing). However, this is not the full cost. In 1977 NRK produced 57 schools television programmes, and repeated a further 127 from previous years. In all, there was 190,5 hours of transmission. The budget for school television in the NRK accounts was 2 400 000 kr . However, if schools television costs are calculated on the same basis as proposed for NFU, the total costs would be 24 098 000 kr. The reason for this of course is that the 2 400 000 kr. was merely programme budget costs (I assume) and did not cover technical costs.

This raises the question:. what exactly does NRK want NFU to pay with regard to school broadcasting - the programme budget cost (2 400 000 kr .) or the full cost (24 000 000 kr . each year? It must be the latter, otherwise there would be two quite different systems of costing, one for schools, and one for adult education, with adult education paying more than 10 times as much, which would clearly be unacceptable. The full cost then for schools broadcasting would be 28 million kr. (25 million for television and 3 million for radio, approximately.) This however would be the minimum cost. It has already been pointed out that more needs to be spent on schools broadcasting to improve the service.

Again, although the figures are large, they have to be seen in context. With for example about 10 million kr. for adult education and 28 million for schools, the total would be about 38 million kroner. This figure is very similar to the amount spent by BBC for schools and further education, or by the British commercial companies, or by the Open University. However, it must be said that these organisations have a much higher level of production than NRK, and much closer contacts with their audiences. On the other hand, costs are much lower in Britain. Perhaps a better example is Utbildningsradion in Sweden, which has an annual budget of 61 million Swedish kroner (68 million Norwegian kroner), or Denmark, which spends 25 million Danish kroner (24 million Norwegian kroner) on educational broadcasting.

The main point is that taking the costs out of NRK and transferring them to the education budget not only indicates the full costs, but places a heavy financial burden on the education budget. Given that television is reaching less than half the schools in Norway, and that both television and radio are underused in Norwegian schools, it becomes even more clear, given the financial burden as well, that if the education budget is to bear the costs of educational broadcasting, then the education sector must have a much greater influence on

policy. This could be done through Norsk fjernundervisning, through perhaps the establishment of a schools broadcasting advisory board as a sub-committee of the NFU council. However, it should have a clear mandate to do this from KUD, and there will need to be extensive discussion between NRK and KUD first. The importance though of having a clear policy for schools broadcasting before NFU takes on the substantial financial burden of schools broadcasting should now be obvious.

3. Copyright. The present copyright agreement, although an advance on previous arrangements, is still clearly unsatisfactory, as far as adult education is concerned. Adult education broadcasts are specifically excluded from video-recording. NFU should press immediately for the same rights at a minimum as for school broadcasts to apply to adult education programmes. Thus specifically designated adult education programmes should be allowed to be copied by either individuals in their homes, or by A/V Sentrals, or by schools, or by recognised adult education institutions, for educational use. The only restriction, indeed, should be on the use of recordings for commercial purposes. If NFU is to pay the full costs of production and transmission, it should aim to buy outright all Norwegian rights on the programmes, so that if it wants to, it can distribute programmes by cassette, as well as, or instead of, by transmission. This may mean paying a marginally higher price for programmes, but it should be a principle that audio-visual materials should be as widely available as possible for adult education purposes. Also, if NFU is paying the full costs, it should have full rights for sale to and/or use by commercial organisations within Norway, and educational and other institutions outside of Norway. A separate agreement however on these kinds of rights should be negotiated, from rights on educational use within Norway, to enable "creators" of the programme material to benefit from commercial use of adult education programmes.

4. Transmission times. NFU should ensure that every programme is repeated at least once within one week of the first transmission, but in a completely different time period. This should apply to radio as well as to television. The reason for this can be seen from an examination of the "use of time" graphs (pp. 19-25). There is no single time when one can be sure that all the potential audience for any programme will be at home and free to watch. If programmes are to be an important part of multi-media courses (as they should be, to justify the expense), it will be essential to make it possible for almost all the potential audience to have the opportunity to view. Research at the Open University[19] has shown that in Britain, at any one time, there is always between 10-20% of adults on shift work, or on an irregular work pattern, or asleep. In addition to this 20% who will always miss one transmission of a programme, there will be between 15-20% who, while normally able to see an individual transmission, will miss any particular transmission because of unavoidable reasons (late home from work, sick, etc.). Thus for any single transmission, the practical, maximum viewing or listening rate for Open University students is around 60-70%. However, a repeat transmission enables the maximum viewing figure for any single programme to be pushed up to more than 90% of the target audience, provided the repeat is at a completely different time from the first transmission.

From the graphs on pages 49-55, the "best" times for adult education programmes - best, that is, in terms of combining convenient study times with times which are currently not heavily used by viewers or listeners - would be as follows:

Television:	Weekday evenings:	18.30 - 19.30
	Sunday mornings:	9.00 - 13.00
Radio:	Weekday evenings:	19.30 - 22.00
	Saturday afternoon:	14.00- 18.00

The best combination of times then for a particular programme would be a first transmission on a weekday evening, with a repeat at the weekend. The proposed arrangement would also help avoid any clashes between radio and television transmissions on the same course - a factor which will become more important when production increases.

It is essential that adult education programmes should have a regular and guaranteed timeslot each year. A student must know that his programme is always on a Wednesday evening, at 18.35, for instance.

5. Staffing. From the earlier discussion about the need for an overall policy for educational broadcasting and the financial implications of adult education programming, it will be clear that decisions on further production staffing ought to wait until such policy decisions have been decided. It can be seen for instance that the recruitment of two more television producers for adult education programmes would require an expenditure of 8 million kroner by 1984 to keep them fully occupied. Similarly, it is difficult to see how an increase in production staff on the schools side can be justified until it is known who will finance school broadcasting, and what the desired production level will be. In particular, increases in staffing should be considered in the light of required improvements to the service as a whole. For instance, might it not be better to use money for strengthening links with the schools, through the use of field officers, than for more production staff? Piecemeal recruitment of extra production staff without an overall policy for educational broadcasting, and without a consideration of the desired balance between adult and schools broadcasting, will only add to the frustration and lack of certainty in the educational broadcasting sector. This is not to deny that more staff are probably needed, and urgently. It just emphasises though the prior, even more urgent, need for clear policy to be decided. The least though that NFU could do is to indicate to NRK whether a 10 million kroner production budget, enabling the production of 24 television and 48 radio programmes a year, is a realistic target for 1984, or to suggest some other planning target, based on realistic cost estimates.

6. Programming policy. I am acutely conscious that this report has not discussed at all so far what kind of programming is needed. This though should be determined primarily on a project-by-project basis. There will be a need though to

work out some guidelines on the most appropriate use of broadcasting, as part of a multi-media package, when other media are also available for teaching. This I hope will be one aspect of a seminar to be held with NRK staff in December, when examples drawn from the Open University will be available. It is clear though that because of the cost, and therefore the comparatively limited number of adult education programmes that are likely to be made, in regard to the possible demand, it will be essential to use broadcasting selectively, to achieve those objectives in distance teaching for which it is most suited. I very much hope that in the early part of 1979, there will be a series of dialogues, seminars, etc., on this issue involving staff from NRK, NFU, and the other organisations providing other media components. Such a dialogue will be an important preparation and development for the effective design of multi-media courses for adult learners.

Conclusion.

There are without doubt a number of formidable problems to be overcome in order to develop a strong, adult education broadcasting sector. There is always a danger when looking ahead at problems, we think we see trolls, but they turn out to be merely shadows. Despite seeing quite a lot of problems ahead, though, I do not think there are any so fundamental that they cannot be resolved, especially given the personal commitment and goodwill found on both sides. It would be less than honest though to pretend that some of the problems are easy. For this reason, I think it is important that KUD, NRK and NFU should give priority to resolving the policy issue on the future of school broadcasting, and the financing of adult education programmes, so NFU and NRK can get down to the main business of producing programmes for educational use.

References.

7. NRK. NRK Årbok, 1977. Oslo: NRK, 1977

8. KUD. St.prp.nr.1 (1977-78) - 9. 1978-79) for budsjetterminen 1978 and 1979. Oslo, KUD, 1977 and 1979.

9. HANDAL, Gunnar. Bruksfrekvens og bruksform for Norsk skoleradio. Linköping: Pedagogiska institutionen, Linköpings högskola, 1973.

14. STATISTISK SENTRALBYRÅ. Radio- og fjernsynsundersøkelsen, 1977 Oslo: Statistisk sentralbyrå, 1977.

10. MALMIN, Björg. "Start 1": Enquete brevskolelever. Oslo: Folkets brevskole, 1977.

11. HASLE, Jon A., and SEIM, A. Kartlegging av bruken av skolefjernsysn. Oslo: NRK, 1976.

12. KUD. Rundskriv F37/78: Adgangen til å fremstille lyd- og billedopptak av skolekringkastingsprogram m.m. til bruk i undervisningsvirksomhet: Oslo, KUD, mars 1978.

13. NRK. Tilråding fra fjernundervisningsutvalget. Oslo: NRK, 1977.

15. STATISTISK SENTRALBYRÅ. Tidsnyttingsundersøkelsen 1971-72, Hefte 1. Oslo: Statistisk sentralbyrå, 1977.

16. SCHRAMM, W. Big Media, Little Media. London:Sage, 1977

17. BATES, A.W. Suggested guidelines and criteria for the allocation of broadcasts, in McKENZIE, N., POSTGATE, R. and SCUPHAM, J. Open Learning. Paris: UNESCO, 1975.

18. BATES, A.W. Options for delivery media, in PERRATON, H., (ed.) Distance Teaching for Formal Education. Washington,D.C., World Bank, 1978.

19. BATES, A.W. Student use of Open University Broadcasting. Milton Keynes: Open University, 1975.

5. KUD. Instilling fra Interimsstyret for Norsk fjernundervisning om Norsk fjernundervisnings organisasjon. Oslo: KUD, 1978

SECTION 5

VIDEO AND OTHER AUDIO VISUAL MEDIA

5. VIDEO AND OTHER AUDIO-VISUAL MEDIA

GENERAL

Unlike broadcasting, there is no homogeneous system for other audio-visual media. Not only do different organisations work in different media, but within a medium, such as film, for example, different organisations are responsible for different aspects, such as production and distribution. Also, both private and State organisations are engaged in this field. It seems to me that the only sensible way to deal with this area is to examine each medium in turn, while recognising that some organisations deal with several media, while others are concerned with only one. At the same time, it is necessary to describe briefly two main kinds of organisation, both of which have an important multi-media role.

Statens filmsentral is a State organisation responsible to the Cultural Department of KUD, but with its own board appointed by the ministry. It is financed by KUD, and in 1978 its budget was 17 910 000 kroner. It has four sections: administration (which also includes distribution); an education and information section; a travelling cinema which brings commercial, "general release" films to remote areas; and a laboratory for film copying and processing. Its budget in 1978 was divided up as follows:

Administration and distribution:	3 965 000 kr.
Education and information:	4 260 000 kr.
Travelling cinema:	4 902 000 kr.
Laboratory:	4 783 000 kr.

Apart from the travelling cinema, Statens filmsentral's main roles are to commission educational and government informational films, to copy and distribute films to schools, to produce film-strips, to develop and process films and film-strips, and to distribute film-strips to schools.

Within the education and information section, the following professional staff are employed:

Head of department
Film
Pedagogic consultant
Film-strip planners (2)

Apart from the film consultant, all the above have an educational background, and tend to work across a variety of projects, sometimes as a team, sometimes individually. There are also five photographers (four on a full-time basis) although most art-work is commissioned externally.

Audio-Visual Centres (A/V sentraler) are usually found in teachers' centres run by the local education service. The teachers' centres (and hence the A/V sentraler) may be run either by the local community or by the county. Their main functions are to:

- provide a range of books for children and teachers
- provide copies of audio and video materials
- provide copies of films most in demand
- provide a meeting place for teachers and in-service meetings
- (in Western Norway) translate materials into Nynorsk

Schools in the area covered by the organising authority can use materials free of charge. Teachers can visit teachers' centres whenever they want. Some areas have a delivery system, whereby each school and education office in the area is visited, and materials collected and delivered. Many centres publish catalogues of what they have to offer, and posters for staff-rooms, etc. The A/V sentraler within the teachers' centres do not normally cost much to run. If provided by the kommune, the equipment must be bought, and the salary of the one or two full-time staff must be paid. However, the State subsidises salaries of such staff. If provided by a fylke, the A/V sentral is funded completely by the State.

It has proved extremely difficult to find out exactly how

many A/V sentraler there are. According to an official report on teaching aids in schools and adult education,[20] there were 50 pedagogic (teachers') centres in Norway in 1976, although Forsøksrådet (Council for Innovation in Schools) has a list of 72 centres, again, though, dating back to 1976. It is estimated though that there must be about 100 now. The Teaching Aids Committee (Læremiddelutvalget) carried out a survey of the 50 centres it had identified, to find out exactly what services they were offering. There were 42 centres that replied. Of these, most (32) were organised by kommuner on a local basis, 7 were organised on an inter-kommuner basis, and three on a fylke basis. Most were concerned primarily with activities for grunnskoler. Centres covering less than 5000 pupils had few full-time staff. The enquiry found that only centres of a certain size could offer variation and breadth of services regarding subject advice, information and production activities. "Most" centres had copying facilities for sound and printed material. There was little loaning-out of technical equipment though. There was however no specific information about the audio-visual activities carried out by pedagogic centres.

A more specific and detailed study of the actual location and provision of audio-visual services in pedagogic centres has been carried out by Dahl.[21] He listed 69 centres, with details of the services provided in many of them, including audio-visual services. Unfortunately, though, even this list is not complete. Some pedagogic centres, such as Trondheim and Skien, while listed, are not described in sufficient detail to indicate that they have audio-visual services, when in fact these do exist at these centres. However, Dahl's information was the best I could find. In Table 5 below, then, I have used primarily Dahl's information, supplemented with additional information obtained in the course of my own study through interviews and visits, and with some information from a request by the Kulturavdeling of KUD for information about video replay equipment in schools (see pp.99-105).

Table 5: LIST OF KNOWN CENTRES WITH A/V FACILITIES

Town	Area	Title	A/V	Audio	Video	Film
Oslo	Oslo schools	A/VS	X	X	X	X
Oslo	Armed forces	A/VS	X	X	X	X
Elverum	Elverum's region	PS	X	X	X	X
Otta	Nord-Gudbransdal	FS				
Gjøvik	Oppland	FS		X*		X
Drammen	Not known	PS	X	X	X	X
Sande	Nordre Vestfold	FS				X
Sandefjord	Kommune	PS	X	X	X	X
Borgheim	Kommune	PS			X	
Larvik	Larvik og Omland	A/VS	X		X	X
Borre	Kommune	PS			X	
Notodden	Kommune	PT	X			X
Skien	Not known	PS	X	X		X
Bergen	Kommune	A/VS	X			
Øvre Ardal	Not known	A/VS	X	X	X	
Volda	Søre og Indre Sunnmøre	PT		X	X	
Molde	Kommune	A/VS+FS	X			X
Stavanger	Kommune	A/VS			X	
Arendal	Aust-Agder	VT		X		
Kristiansand	Vest-Agder	VT	X	X		
Judaberg	Finnøy	A/VS	X	X		
Bruhagen	Averøy	PS	X			
Karmøy	Karmøy	PS			X	
Førde	Kommune	PT		X		
Trondheim	Kommune	A/VS	X	X		X
Steinkjer	Nord-Trøndelag	A/VS	X	X	X	X
Bodø	Salten	FS				X
Sørarnøy		BS				X

Table 5 (cont): LIST OF KNOWN CENTRES WITH A/V FACILITIES

Town	Area	Title	A/V*	Audio	Video	Film
Inndyr		BBS	X			
Sortland	Bø,Andøy,Øksnes	FS				X
Storkmarknes	Hadsel	FS				X
Narvik	Ofoten	FS				X
Mo	Rana	FS				X
Herøyholmen	Herøy	BS				X
Tromsø	Troms	A/VS		X		X
31		17	16	16	13	22

*A/V: a general term, which could cover anything form a photocopying machine to a full video-distribution system.

A/VS = A/V Sentral (always part of PS)
OS = Pedagogisk Senter
FS = Filmsentral
PT = Pedagogisk Tjenestekontor
VT = Veiledningstjenesten
BS = Bildesentral
BBS = Bildebåndsentral

There is an urgent need for more accurate information of this kind for the planning of distance education in Norway - not to mention for the needs of teachers and teacher trainers. Furthermore, because most of these centres are run by the kommunes, and because new services are being added all the time, this information needs to be updated yearly.

However, if Table 5 is treated as minimum information, a number of conclusions can be drawn. Most of the centres that do exist act as film loan and distribution centres.

About half provide recording facilities for NRK school radio programmes. Only 13 centres though have been identified with video recording facilities. Although Figure 5 shows that there is a growing base on which might be built a comprehensive system of A/V Sentraler, at the moment coverage is at best patchy, and those that do provide an audio-visual service are mainly limited to film distribution or audio recording facilities. Coverage is generally better in the large cities or main towns than in rural areas.

This picture was confirmed by my visit to Trondheim and Røros. The A/V sentral in Trondheim was part of the pedagogisk centre and was provided by Trondheim kommune (city council). It was well-equipped, and excellently organised. There were two full-time people employed to run the A/V sentral, one responsible for audio services, and the other for 16 mm films. Each school in Trondheim has an A/V contact person, who centralises the ordering, looks after the equipment in the school and receives and distributes information. There is a kommune transport service, which visits each school and kommune office once a day, and cassettes and films are collected and delivered in this way. Schools order and purchase their own A/V equipment, and servicing is provided by local suppliers, and paid for by the schools. There was close contact between Trondheim A/V sentral and the A/V sentral at Steinkjer, in Nord-Trøndelag, which was run by the Nord-Trøndelag fylker. There was no fylker A/V sentral for Sør-Trøndelag, though, although there was an arrangement whereby someone from Oppdal kommune could use recording and copying equipment at Trondheim A/V sentral. All costs, though, including manpower, had to be covered by Oppdal itself. In contrast, there was no pedagogic centre or A/V service at all for the Røros area, except what the schools themselves could provide.

Specific services offered by Statens filmsentral and Trondheim A/V sentral will be dealt with under the various media.

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Fig. 9. Centres with some A/V facilities.

FILM AND FILM STRIP

Production

Film. Statens filmsentral does not make films itself. It formally administers and monitors grants from KUD to film-makers such as Norsk Film A/S or private companies. In 1977, it administered funds for 18 films, of which 10 were made for KUD[22]. In 1978, it expects to administer 21 films. In addition, Statens filmsentral buys film from abroad, and provides a Norwegian version. In 1977, it had 3649 films in the archive. There were 63 200 requests for loans in 1977. An innovation in 1977 was the introduction of 118 short "concept" films of about 3 minutes length, on super 8 mm. film.

There are private companies who produce films which can be used for educational purposes. For instance, Norsk Dokumentarfilm A/S has produced about 200 films since 1960 which could be used for educational purposes.

An analysis of Statens filmsentral's sales catalogue lists 529 titles. Over half (55%) are original Norwegian productions, but of all 529 titles, less than one third (30%) were made in the last 10 years. The films available for loan show an even greater proportion of old films.

There is sufficient film production facilities in Norway for educational purposes. For instance, Norsk Dokumentarfilm A/S has its own studio, with capacity for 35 mm or 16 mm film production, although in the last few years, all production has been in 16 mm film. It has lights, cameras, sound recording and dubbing facilities, special effects, animation, and editing facilities - everything needed for film work, in fact, except laboratories for film processing. There are several other organisations also which have similar facilities, or access to such facilities:

Information Films A/S
Svekon Film
Opplysningsfilm A/S

Caprino Film (specialising in animation and special effects)
Centralfilm A/S
Norsk Film A/S

The main limit to increased film production is not a lack of professional and technical production staff, nor a lack of production facilities, but a lack of finance for production. Some of the private film-makers for instance felt that the State, as the major subsidiser of film production in Norway, was forcing out private film production in favour of the State-subsidised film company, Norsk Film A/S.

The government, through the cultural department of KUD, provides an overall state subsidy for short film production of 4 million kr., of which 1 million kr. is specifically earmarked for children's films (but not necessarily educational films). The remaining 3 million is the money Statens filmsentral administers for short, non-feature film production. Half this amount is available for application every six months. Allocation is by jury, consisting of one representative from:

Statens filmsentral
Film producers' association
Film workers' association
NRK
Statens skolefilmnemnd

Proposals are judged strictly on their merits as a film, i.e. there is no policy or plan to develop or commission films in certain areas, or to meet overall curriculum goals, or even for educational purposes. Sometimes proposals suggest accompanying print material, but the grant covers only the costs of film production, so printed costs have to be covered from other sources. The preparation of a script for a bid costs about 10000 kr., without any guarantee that the bid will be accepted.

The production cost for a 20 minute, 16 mm colour docu-

mentary film can range between 100000 and 200000 kr. Two of the films planned by Statens filmsentral for production in 1978 have budgets of 151000 and 173000 kr. respectively. Thus there are funds available from KUD's cultural department for a total of about 18 films a year. In addition, there are documentary and information films made on a commercial basis by Norwegian film companies. Statens filmsentral adds about 20 to 25 new Norwegian-produced films to its library each year, including film versions of television programmes made by NRK.

It takes about six months to make a straightforward 20 minute documentary film. Statens filmsentral is willing to assist NFU in planning and commissioning films on NFU's behalf. Indeed, if NFU is to make use of films, Statens filmsentral believes it is essential to make use of their experience, and involve Statens filmsentral staff in the planning of projects. However, Statens filmsentral will require more staff if NFU is to use its services extensively (two more staff were requested from KUD for this purpose, but they were not approved). However, Statens filmsentral could increase production by hiring contract film producers, if a budget was provided for this purpose. Staten filmsentral's budget has to be planned in January for the following year. Therefore January 1979 would be the last date by which resources could be secured for film production in 1980.

One of the private film-companies prepares scripts for educational films in collaboration with teachers who have attended a special course run by the company on the utilisation of film in the classroom.

In addition to the main film companies, Roger Arnoff A/S has full film (and video) dubbing facilities for 35 mm, 16 mm and super-8 mm film, with 16 track facility, and ability to dub optical sound track as well.

Film-strip

Statens filmsentral also has about 250 different film-strips, each of about 20 to 30 frames, available. Many are produced to

accompany NRK school radio programmes. There were 34 produced in 1977, of which 20 were made in conjunction with NRK.

Copying and hiring

Statens filmsentral has facilities for copying 16 mm monochrome or colour prints. Private film producing companies sell their prints direct to Statens filmsentral or to local A/V sentrals. The cost for a 20 minute, 16 mm colour film per copy is about 1600 kr., covering the cost of printing and royalties. Copyright and royalties are worked out in conjunction with the Film Producers' Association. The normal practice is to make a "once-off" payment to producer and technical staff, leaving the company free to distribute as it pleases. Norwegian educational films normally sell about 100 copies, or, if sold to Sweden as well, about 200 copies.

Once a copyright has been purchased, the technical cost of copying colour film is 4,5 kr. per metre. A 20 minute film would require 250 metres of film, so would cost approximately 1125 kr. per copy.

Borrowing costs of film from Statens filmsentral depends on length. Cost of hiring individual films is as follows:

Playing time	Cost of hire
Up to 11 minutes	15 kr.
12 to 23 minutes	20 kr.
24 to 45 minutes	30 kr.

This includes delivery costs. This is not of course an economic rate, being heavily State subsidised.

Statens filmsentral does not send out accompanying printed material for films.

As already mentioned, there are a number of local A/V centres or film centres which also hire out films to schools. Trondheim for instance has a stock of 500 films bought by the kommune,

some of which are quite old, but it received 3000 requests for film in 1977. The sentral provides a complete loose-leaf catalogue for each school, which includes a brief description of each programme, and the age-range for which the film is considered appropriate. The catalogue cost 30000 kr. to produce, but now can easily be kept up to date by the use of the loose-leaf system.

The super 8 mm film "concept" strips are sold to schools at 100 kr. per copy. There are already 118 strips and another 140 are planned for 1978. 224 copies were sold in 1977. Statens filmsentral suggests that "the low sales must be seen against the background that many schools lack suitable equipment",[22] since super-8 needs a different projection system to 16 mm.

I have been unable to find figures for the number of schools with 16 mm and super 8 mm projectors. I have been told by several people that nearly all schools have 16 mm projectors. There are no figures available though in Læremiddelutvalget's report.[20]

With regard to adult education, the voluntary organisations such as Folkeuniversitet and A.O.F. can also borrow through Statens filmsentral. Opplysningsfilm A/S also makes and/or distributes films to adult education classes. These are usually commercial films or films made by commercial companies such as Shell and Philips, and distributed free through Opplysningsfilm.

NRK rarely bought uncommissioned films from Norwegian film companies for transmission. One representative of a film company believed that this was due more to a question of producer independence than of money or of an objection in principle.

Film-strips from Statens filmsentral cost 30 kr. each, including accompanying text. Statens filmsentral however did not provide cassettes or audio tapes of the linked broadcasts. Trondheim A/V centre however provided a package to schools of film-strip, notes, and cassette, for 38,43 kr., including packaging (51,95 kr. if a tape instead of cassette was sent.)

Several people interviewed were critical of Staten's film-sentral's distribution system. Teachers often had to wait for more than a month after ordering. The main problem was the lack of prints. If there was accompamying material to go with a film, Statens filmsentral did not ditribute it. Nor did they distribute the sound tapes from NRK to go with the radio-vision film-strips. Tape copies of school radio programmes are available from another company ("IL" Arbeidssenter A/S). Thus a teacher would have to send away to Statens filmsentral for the film-strip, and either record the programme himself, or send away to either "IL" or his local A/V centre. Either way, it makes the planning and integration of films, radio programmes, and film-strips into an on-going classroom situation very difficult, especially when the teacher could not be sure of when the materials would arrive. One representative from a film production company thought that distribution via local A/V centres was much more efficient, but even this system was not as efficient as he would like.

There has been no study of the utilisation of films in schools or adult education. While the demand is high, this has to be seen against the background of the numbers in school. One private production company had followed up two films, to see how many pupils had watched them. About 600 children had watched each one in each year. Assuming that each film repquested was seen by one class on average, every child in grunnskolen/vederegående skoler will have seen, 2.13 films a year distributed from Statens filmsentral alone. To this must be added distribution from A/V centres, although it is possible that schools will use on or the other, rather than both. On a similar basis of calculation, if each television programme in 1975 was seen by 6000 chrildren on average, then every child in Norwegen schools will on average have seen 1,55 television programmes. Thus film is still more used i schools than television in Norway, although, because less than half the schools have a television set, those schools that do have television are likely to use television more than film.

Finally, the Council for Innovation in Schools (Forsøksrådet) took part in a Nordic study of the use of audio-visual materials in schools. They came to the conclusion that the main reason for not using equipment was not a lack of money, but that it was not convenient to use A/V materials. Equipment needed to be located and set up, and materials such as films often had to be ordered well in advance. Teachers were more likely to use pre-prepared materials than when they had to prepare them themselves. According to this study, "nearly all schools had 16 mm film projectors but super 8 mm projectors were more scarce."

VIDEO

Production

There are two private video production companies in Norway, Roger Arnhoff Studio A/S and Centralfilm A/S. One of these companies was visited. It had a small, but relatively sound-proofed studio. There were two colour cameras and a black-and-white camera which could either be used in the studio for graphics, or with the outside broadcast van. The outside broadcast van was also the studio control room. Recordings can be made and edited on either a 1" IVC or a 3/4" Sony U-matic. There is excellent sound dubbing facilities for film or video, including a special effects generator and a small studio for voice over. (This facility was extensively used: for instance, for making Norwegian versions of foreign film and video material). There is also a single telecine facility, allowing 35 mm, 16 mm, or super 8 mm to be transferred on to 1", 3/4" or ½" video tape. Also, there was a sound recording studio facility of the highest international standard, adequate for high-quality recordings of music for records or broadcasting. Relevant sound facilities (e.g.mixing) could be linked to video production. There was one video/film producer on the staff. Other staff were primarily administrative and technical staff (dubbing mixers, sound recordists, engineers). Producers from NRK were hired on a private basis for film or video production. Most programmes were made mainly for industrial or military training. Production facilities were limited by lack of staff and facilities. The equipment is rather basic, and would certainly not result in a broadcast-quality picture. The facilities would though probably be adequate for use in educational conditions in terms of picture, although even then limited in terms of the range of possible production styles available. There is no doubt though that adequate educational programmes could be made with these facilities, if appropriate staff and resources could be made available. The cost of hiring the studio is 12000 kr. per day.

In the State system, I identified the following centres with video production facilities: University of Bergen (Audio-

Visual department); University of Oslo (two:centrally and in the Pedagogisk institutt) University of Trondheim (Pedagogic Institute); And Universitetsforlaget (Ullevål kino). The first and the last of these was visited, because I was informed that Bergen was better staffed and equipped than the other two Universities, whose equipment was mainly geared to micro-teaching (observation of teachers and children) rather than programme production.

The A/V department at Bergen University has the following facilities:

- Video. The department has a Philips Video 80, three-camera colour system, recording on to a Grundig 1" master tape with editing facilities. There is also a rostrum video camera for titles. There are no telecine facilities, video recording of film being made direct from screen projection. There is a special effects generator and mixer, and an audio mixer.

  The video studio is a large unconverted ground-floor room, using stand lighting, although gantry lighting is planned. The room is not soundproofed, although it was reported that recordings were made at times when the area was quiet. It is planned to convert a van for external video work, using the basic equipment, which is also portable. The new studio has been open only since February, and is still being developed.

- Sound. There are facilities for recording sound separately from video, with sound mixing equipment, and there is a small soundproofed studio.

- Film. There is a 16 mm. film camera, with synchronised sound. Film editing facilities are borrowed locally from an independent film producer, and dubbing is done in Oslo by Roger Arnhoff A/S.

- Staffing: the staffing of five consists of the head of department, a production engineer/director, a pedagogic consultant/graphic artists; a photographer/cameraman; and a secretary. These all help with studio recordings although crews can be hired from the local NRK studio.

Again, these facilities are rather basic, and would not result in broadcast quality picture or sound. The sound in particular is likely to be a problem. The facilities also limit to some extent the range of possible programme styles and programme techniques that could be used. Once again, it is possible to make programmes of sufficient technical

quality for educational purposes, for distribution on tape or cassette. However, the lack of staff, both for production and on the pedagogic side, and the need to meet the requirements of the University first, means that production opportunities will be limited, given that spare technical capacity even today, in the early stages of the development of the service, is only 20%. However, provided NFU was willing to pay, the A/V department at Bergen was willing to produce programmes for NFU, if it wished.

Universitetsforlaget has a studio, not currently in use, in the former Ullevål kino (cinema). There are three monochrome cameras, recording on to 1" Ampex master tape, plus several Philips 1" video recording machines. There is a 16 mm telecine/slide projector, and suitable sound recording facilities. The equipment, though in working order, is a little out-of-date, given the recent advances in low-cost colour production facilities and video recording and editing. However, the main feature is the studio. This was the best non-broadcast quality studio that I saw in Norway. It was large, sound-proofed, and high, with good gantry lighting. Equipment is relatively easy to replace or up-date, but finding a good studio is much more difficult. Universitetsforlaget is considering selling the facilities to the University of Oslo's Pedagogic Institute, although possibly Statens filmsentral, which has no video production facilities, may be interested in sharing the facilities with the University.

In summary, non-broadcast video production facilities are not extensive, and those facilities that do exist are only just at the minimum technical standard required for the production of educational programmes for distribution on cassette or tape, and are certainly inadequate for broadcasting. Furthermore, there is no State subsidy system for video production, as there is for film, and, unless NRK staff are hired on contract, there are no producers or technical production staff.

To set up a video production facility, excluding the cost of a studio, would cost in the order of 800.000 kr. plus,

for equipment alone. For instance, a Philips Video 80 system, consisting of two colour cameras, one momochrome camera for captions, a camera remote control unit, sound and vision mixer with chroma key facilities, and a 1" recording/editing machine, would cost about 400 000 kr. Lighting costs will vary, depending on the nature of the building housing the studio, and could be very expensive, but with installation, a normal cost might be around 150 000 kr. Converting an existing building to a studio - making the floor firm, sound-proofing, wiring and electrical installations - could also be very expensive, but may not be necessary. Outside broadcast facilities could not be purchased for less than 140 000 kr., for a suitably adapted vehicle, and using the studio cameras and mixing and editing equipment as part of the outside broadcasting unit. A tele-ciné facility, for incorporating 16 mm film and slides into programmes, would cost 120 000 kr. Thus, without studio building or conversion costs, a minimum video production facility would cost more than 800 000 kr. In addition, there would be annual recurrent expenditure required for staff and programme production costs.

Video is very much an area where money buys increased technical facilities, and by increasing technical facilities, the range and scope of educational uses of television can be increased. Large expenditure does not necessarily guarantee quality or educational effectiveness - but without substantial expenditure, these are very difficult to achieve, as far as television is concerned.

Copying and distribution

a. Equipment: standards and machines. There are two kinds of video replay machines. One uses open-reel tape, the other uses cassettes. Open-reel machines nowadays tend to be used primarily for recording from production, for editing, and for masters for copying purposes. The introduction of thinner video tape in cassette form has dramatically lowered costs, and has thus brought to a much wider public the possibility

of home and school recording and play-back of television programmes. Television material can be obtained from two sources: recording of television programmes transmitted "through the air"; or through the physical distribution of tapes or cassettes, by mail, etc.

There are now several different and incompatible cassette systems available in Norway. Philips has a ½" VCR system, using two basic kinds of machine. The N1502 is capable of playing cassettes with a maximum playing time of 1½ hours. This machine is sold primarily for use in schools and other institutions. The N1700 (or VCR long-play) can use the same cassettes as the N1502, but has twice the minimum playing time (3 hours). While the same cassettes can be used on each machine for recording purposes, tapes recorded on the N1502 cannot be replayed on the N1700, and vice-versa.

Grundig have taken Philips VCR system, and from it developed what they have called "Super-VCR", with a maximum playing time of 4 hours. Again, although the same cassettes can be used for recording, programmes once recorded on the Grundig machine cannot be played back on either of the other two VCR systems.

Sony has developed two separate systems also. The first, and longer established, is the U-matic, which uses tape of 3/4" thickness. This is considerably more expensive than the other systems, and now tends to be used more like the open-reel tapes, for masters for copying, editing and semi-professional production. The second, newer and cheaper system is Betamax. This uses ½" tape thickness, and has a maximum playing time of three hours. It is not compatible though with any of the other systems.

Finally, JVC has just introduced to Norway its VHS system, which also uses ½" tape, and has a playing time of 3 hours maximum.

There are therefore at least six different, incompatible

systems now available in Norway. To confuse further the situation, each of the systems is licensed to various manufacturers. Thus the same manufacturer may well have, under its own brand name, more than one system on offer.

Apart from the Sony U-matic, which is substantially more expensive, all the systems sell at roughly the same price for machines and cassettes, although for the N1502, cassette costs per hour of playing time are at least double.

	N1502	N1700	Betamax
Machine	7900 kr.	7900 kr.	9980 kr.
Video-tape: 3 hours	390 kr.	150 kr.	110 kr.

The JVC machine price is between the Philips and Betamax price, and tape costs are comparable to Betamax. Prices quoted include tax, and a royalties payment to NRK in the price of equipment. Prices could probably be reduced by up to 25% for large orders (over 500 units).

b. Copying. Programmes are normally recorded originally on to master tapes of greater width, and hence better picture quality. Each time a programme is transferred from one tape to another, there is a loss of quality on the "second" tape. For physical distribution, it is usually necessary to copy from a wider width with master tape to cheaper, narrower tapes. To do this, two machines, one for each standard, is required. One piece of equipment which improves the quality of the copying considerably is a time-based corrector, which basically matches the two machines electronically.

As well as copying from an original master, it is often necessary to transfer from one cassette standard to another - e.g. from Umatic 3/4" to Philips 1/2". This can be done, provided machines of both types are available. Also, even within the same cassette standard, programmes made on North American video standard (NTSC - 525 lines to a picture), or on French, Eastern European or some Asian countries standards, (e.g. SECAM) are not compatible with Norwegian television sets, unless they

have already been converted to the Norwegian standard (PAL, used in Scandinavia, Britain and West Germany). Sony manufactures a U-matic machine capable of playing any two out of the three standards. Thus great care needs to be taken in obtaining programmes on video-tape or cassette from North America, France, Japan, or Eastern Europe, to ensure that they have been, or can be, converted to PAL-standard. However, blank tapes and cassettes on sale in Norway of course are all suitable for Norwegian television.

It is possible to copy films on to video-cassette or tape by means of a teleciné machine. Thus it is more common to buy film-copies of programmes from countries on other standards, and put them on to video-tape in Norway by means of a teleciné machine. Although this may all sound complex, video is in fact a flexible medium, which can be used for making copies of films, or for recording "down" from a more expensive - and better quality - tape standard, to a lower, but perfectly adequate, tape or cassette standard, or, if machines are available, for conversion from one kind of video cassette standard to another. At the same time, because of the ease with which this can be done, copyright regulations can easily be breached.

Roger Arnhoff A/S has the most extensive video copying service in Norway, outside of NRK. They have 10 "slave" Philips VCR machines, enabling 10 copies to be made in "real time" (i.e 10 copies of a 20 minute programme in 20 minutes). They also have 12 "slave" Sony U-matic machines. Facilities exist for transfer from Sony to Philips or the reverse. Copying costs, including cassette, for Philips or Sony, vary according to number, but for more than 10 copies, the price per cassette would be:

Playing time	Cost
10-15 mins.	145 kr.
16-22 mins.	188 kr.
23-30 mins.	230 kr.
31-45 mins.	305 kr.
46-60 mins.	395 kr.

Statens filmsentral has bought two master editing and eight standard Sony U-matic copying machines, initially for copying NRK news and other programmes for merchant seamen serving on Norwegian ships. However, it has no VCR equipment, nor telecine facilities, although these will be obtained if funding can be obtained. There are now two video technicians and a video engineer.

Availability of video replay machines in Norway. It is difficult to estimate the likely growth of domestic ownership or rental of video-cassette machines. Based on sales in the last couple of years in Norway, and on Philips' own market estimates, it is likely that by 1980, 100000 households (8%) will have VCR machines. Sales are doubling each year on the previous year's base, and Philips now has a nation-wide system of dealers and maintenance for VCR machines. If sales were to continue doubling each year, every household in Norway would have a VCR machine well before 1985! That of course is not likely to happen. A point will be reached where the price is too high for families below a certain net income. Nevertheless, it seems extremely likely that there will be high domestic ownership or rental of video-cassette machines in Norway by 1985, and this is a factor which should enter into planning for distance education in Norway.

A more precise picture now exists regarding the availability of video-cassette machines in schools. Philips themselves have estimated that about 800 machines have been sold to educational institutions in Norway, at all levels. Hasle and Seim's study[11] found that in 1975, 168 grunnskoler had video equipment of one kind or another. However, more accurate and up-to-date information is now available. In August, 1978, the cultural department of KUD requested information from schools about ownership of video recording equipment, to provide planning information for the regulation of recording by A/V centres. Even though KUD itself has not had the chance yet to analyse and systematise the information, this has been generously made available for this study. It must be remembered though that this information was not collected for the purpose of this study. KUD has pointed out

for instance that they cannot guarantee that the lists of schools with machines is either exhaustive or systematic at this point in time. Nevertheless, as can be seen from Table 6, when systematised the information does give a clear picture of the situation in grunnskoler at the moment, providing too much reliance is not placed on individual figures. This is because six fylker merely listed the number and make of machines, and therefore I made the assumption (based on an analysis of information from fylker which did list both schools and machines) that there was one machine per school, and that the information was for grunnskoler (unless otherwise stated). Nevertheless, it is possible that on a few occasions, there will have been more than one machine per school, and it is also possible that some machines were not located in grunnskoler, but in videregående skoler or A/V centres.

The returns also indicated that many schools were about to purchase, or were wanting to purchase machines, and a number were waiting for their local A/V centre to be authorised to record and distribute programmes. However, schools known to be waiting to purchase have not been included in Table 6.

In Stavanger, all 34 schools covered by the local A/V centre have been included, although it is not clear whether all these schools have machines. Schools or centres other than grunnskoler which were listed as having machines have been treated separately, in the last column in Table 6. Nevertheless, despite these qualifications, the information is precise enough to give a good approximation to the minimum provision of video-cassette machines in grunnskoler at this point in time.

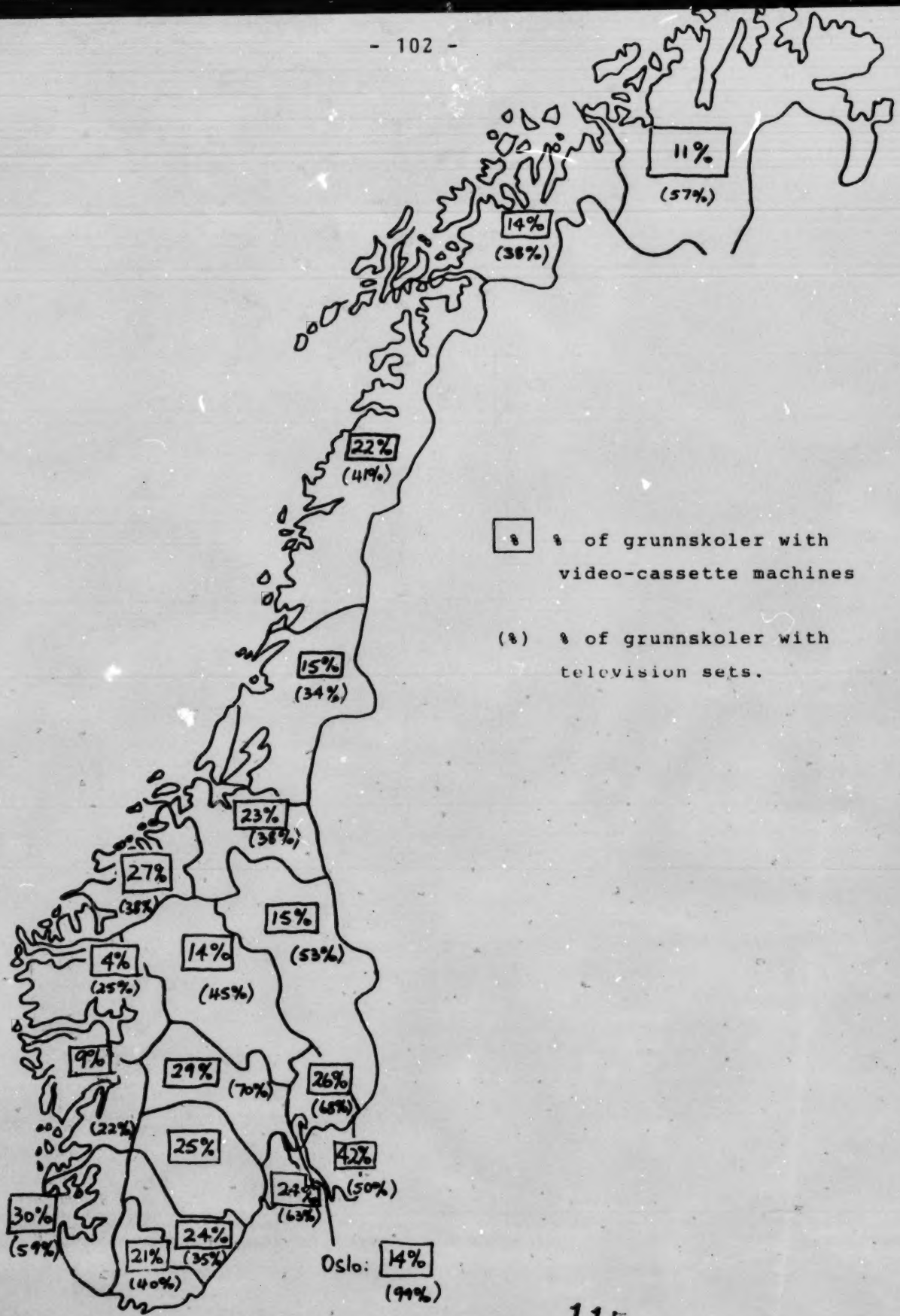
Thus, from Table 6 it can be seen that 674 grunnskoler (19%) are known to have video-cassette machines. In 1975, 45% of schools had television sets. If no more schools have purchased sets, then 43% of grunnskoler with television sets will now also have a video recording or playback machine. As expected, there is variation from county to county (Figure 10). The two

NORWEGIAN SCHOOLS

County	No of grunn-skoler	Grunnskoler VCR[2]	U matic[2]	Un-named[2]	Total (with) machines[2]	% of grunn-skoler[2]	% with TV[3]	Other school centres listed with machines
Østfold	126	52	-	1	53	42%	50%	-
Akershus	202	50	2	1	53	26%	68%	1
Oslo	119	-	-	17	17	14%	99%	11
Hedmark	156	23	-	-	23	15%	53%	1
Oppland	192	25	1	-	26	14%	45%	-
Buskerud	147	41	-	1	42	29%	70%	1
Vestfold	132	27	5	-	32	24%	63%	4
Telemark	179	43	1	1	45	25%	46%	-
Aust-Agder	85	18	-	2	20	24%	35%	-
Vest-Agder	104	22	-	-	22	21%	40%	1
Rogaland	218	64	1	1	66	30%	59%	3
Hordaland	393	34	-	2	36	9%	22%	-
Sogn of Fjordane	209	2	5	1	8	4%	25%	-
Møre og Romsdal	300	80	-	-	80	27%	38%	-
Sør-Trøndelag	177	33	-	-	33	19%	38%	14
Nord-Trøndelag	143	20	1	-	21	15%	34%	-
Troms	172	35	-	2	37	22%	41%	-
Nordland	346	32	4	12	48	14%	38%	-
Finnmark/Svalbard	112	12	-	-	12	11%	51%	-
TOTAL	351	613	20	41	674	19%	45%	36

1. STATISTISK SENTRALBYRÅ. Utdanningsstatistikk: Survey 1, 1975, Oslo: CBS, 1977
2. From responses to KUD's enquiry (16/8/1978) on video equipment in schools
3. From SEIM, A, NRK Skolefjernsynets lærerhefte, mars/april 1976.

TABLE 6: DISTRIBUTION OF VIDEO-CASSETTE MACHINES IN NORWEGIAN SCHOOLS



115

Fig. 10. Distribution of Video-cassette machines in grunnskoler.

areas with the least proportion of television sets in 1975 have also the least proportion of video-machines, although there is no direct relation generally in this. For instance, Oslo, where in 1975 almost every school had a television set, had one of the lowest proportions for video-machines (though one might suspect the accuracy of the video-machine information here.) Since the Hasle and Seim study three years ago, there has been a four-fold increase in the availability of video-machines, and it is clear that many more schools intend to obtain machines. The system used is overwhelmingly the VCR system. Of the machines listed, (91%) are known to be of the VCR system, and many of the remaining "unnamed" category are also likely to be VCRs.

There is even now then an extensive spread of schools through Norway with video-recording or replay capacity. A better picture of this can be seen by looking at the distribution of machines in a typical fylke, Sør-Trøndelag. Altogether, 47 schools with machines have been identified, and Figure 11 shows that they are widely spread through the fylke. At the same time, there are important areas of population still not covered, for example Orkanger, Røros, Løkken, Oppdal. However, it should be remembered that before January 1st, 1978, it was illegal to record schools television programmes "off-air". Given the signs of continued rapid growth in the purchase by schools of video-cassette machines, it is not likely to be too long before most kommunes in most areas have at least one school with VCR facilities, although the more isolated or more rural communities are more likely to be without such machines, at least in the immediate future.

Representatives of Sør-Trøndelag fylkeskolekontor, Røros skolekontor, and Røros skolestyre all stressed that there was no objection in principle to adult education students (on properly registered adult education courses) using schools as meeting places or indeed using equipment in schools, such as video equipment, even if no teachers were present. It was seen as part of the national education policy to make school facilities more widely available to the general public.

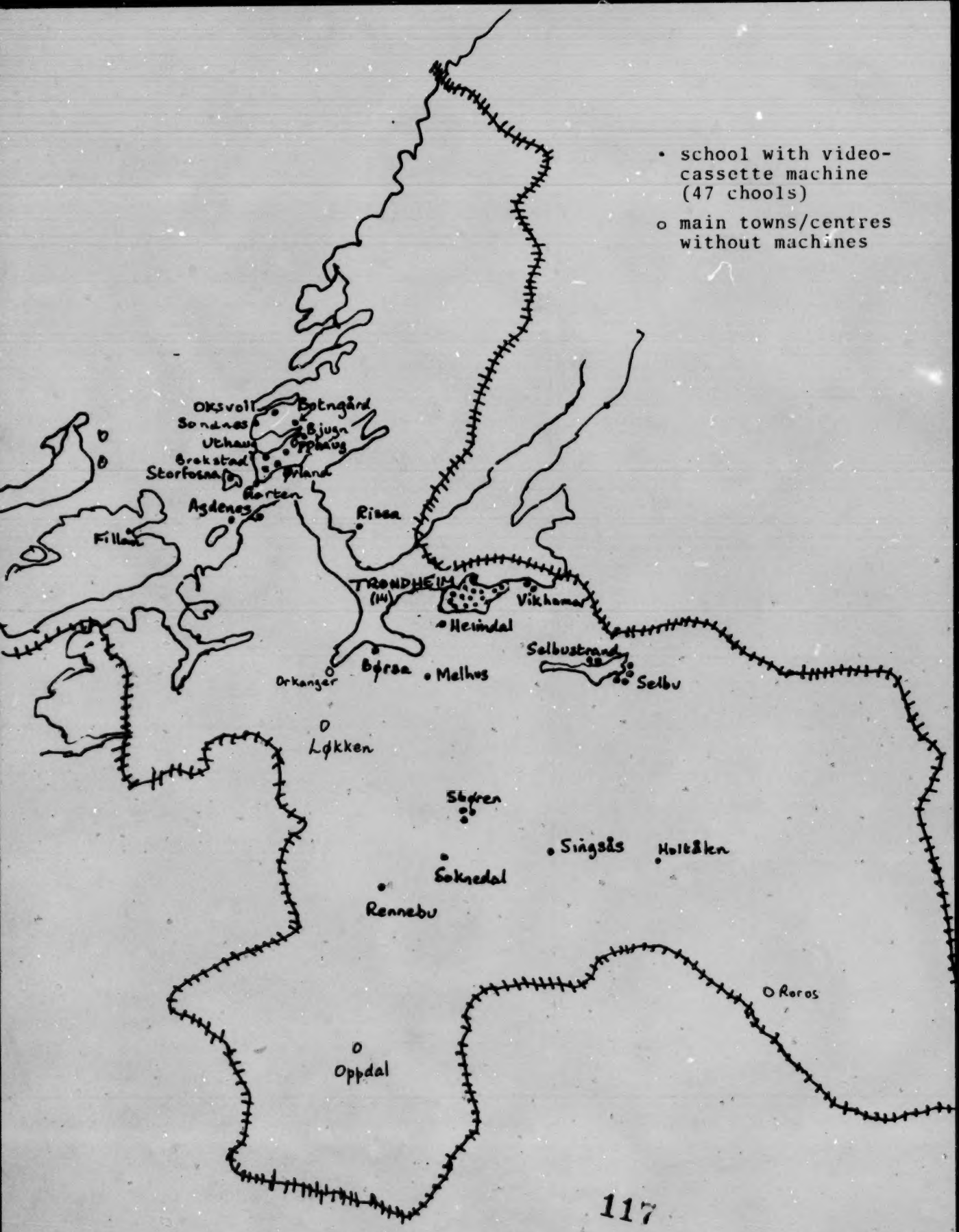


Fig. 11. Distribution of video-cassette machines in Sør-Trøndelag schools.

A number of A/V centres - such as Trondheim, for instance - want to provide a video copying service for schools, but are awaiting for the moment for a decision from KUD giving permission for the A/V centre to record and distribute video programmes, as required by the new copyright agreement.[12] Royalties will need to be paid on each recording, according to a scale of charges available from KUD (see also pages 42-43 and 71-72 of Section 4: Broadcasting). In any case, most A/V centres, being run by local kommunes, will be restricted to making copies for only schools within their own kommune. Thus, in Sør-Trøndelag for instance, it is only the schools in Trondheim that are likely to be covered by a copying service.

The number of video cassette machines available to adult education classes through the voluntary organisations is not known, but is thought to be very small indeed, if any. Adult education programmes are excluded in any case from the copyright agreement.

AUDIO AND AUDIO-VISION

Production

Audio material can be produced and distributed on audio-cassettes, records or soft, plastic discs (called flexi-discs). Audio-cassettes though are the most commonly used audio medium for educational purposes, because of the ease of stopping and rewinding, and the greater convenience in handling and packaging. One advantage of audio-cassettes is that production costs are extremely low. Any teacher or course designer can produce an audio-cassette. Thus production costs can be negligible. However, it is better to use a proper sound-proofed studio and a recording engineer or technician, if possible, particularly if large numbers of copies are to be made from the original.

There are several places where professional recordings can be made - for example, Roger Arnhoff A/S, Norsk Språkinstitutt, or Polygram A/S. A small studio, suitable for voice only, together with a technician and recording equipment, can be hired for as little as 140 kr. an hour, plus tax. Editing facilities can be hired for 70 kr. an hour. Norsk Språkinstitutt produces language teaching cassettes, and places strong emphasis on good educational principles in the production of cassettes. Folkeuniversitetet had also produced language tapes for its Norwegian course, "Snakker du norsk?". Otherwise, though, I was unable to find anywhere else which specialised in the production of educational cassettes. NRK school radio programmes of course are sometimes available on cassette from A/V centres, or from "IL", but these are not specially produced as cassettes.

Audio-vision is the simultaneous use of separate audio and visual media. The sound component may be in the form of radio, cassette, record, or flexi-disc. The associated visual material may be in the form of print, charts, diagrams, pictures, graphs, slides, film-strips, or samples of materials (everyday objects, models, specimens, plants, etc.). Basically the audio channel is used to talk the learner through the visual material. There

are two forms of audio-vision: radio-vision; and non-broadcast audio-vision. Radio-vision requires students to undertake activities based on visual media while listening to a radio programme. Non-broadcast audio-vision requires students to carry out activities based on visual media while working through a cassette, record, etc.

There is therefore a difference between audio-vision, and the quite common practice of providing accompanying notes or booklets for radio programmes. With audio-vision, the learner carries out activities on the visual material while listening, as an integral part of the teaching process.

The visual component can take a wide variety of forms. The most common is print, but even with print, there is a great variety of formats. The sound component may be accompanied by a poster, with a single or several drawings illustrating important ideas; or by simple diagrams or pictures, mathematical problems, equations or formulæ, songs or poems, music scores, or extracts from texts, either type-set or done by hand, and reproduced on a duplicating or multi-lith machine; or by fully printed audio-vision handbooks, sometimes in full colour, containing maps, photographs, diagrams, statistical data, and additional textual information; or by a single sheet, a map, technical drawing, or postcard of a painting.

Colour printing is expensive, so alternatives sometimes used in audio-vision are 35mm colour slides or film-strips (a set of single 35mm or 16mm transparent photographic frames, joined together). 35mm slides cost about 1,75 kr.each, but film-strips cost less than 20 øre a frame. Slides and film-strips require viewers, and these can range from over 500 kr. for a carousel projector, which throws a large picture on to a screen or wall, and is suitable for group viewing, to less than 2 kr. for a simple, single-lense film-strip/slide viewer, which is perfectly adequate for individual users. Even stereo-viewers can be provided for less than 10 kr. each. To these prices must be added costs for design and distribution, but the cheap viewers can be folded flat and are very light-weight, being made of plastic, so mailing charges would be very small. Some examples of slide and film-strip viewers are shown in Figure 12.

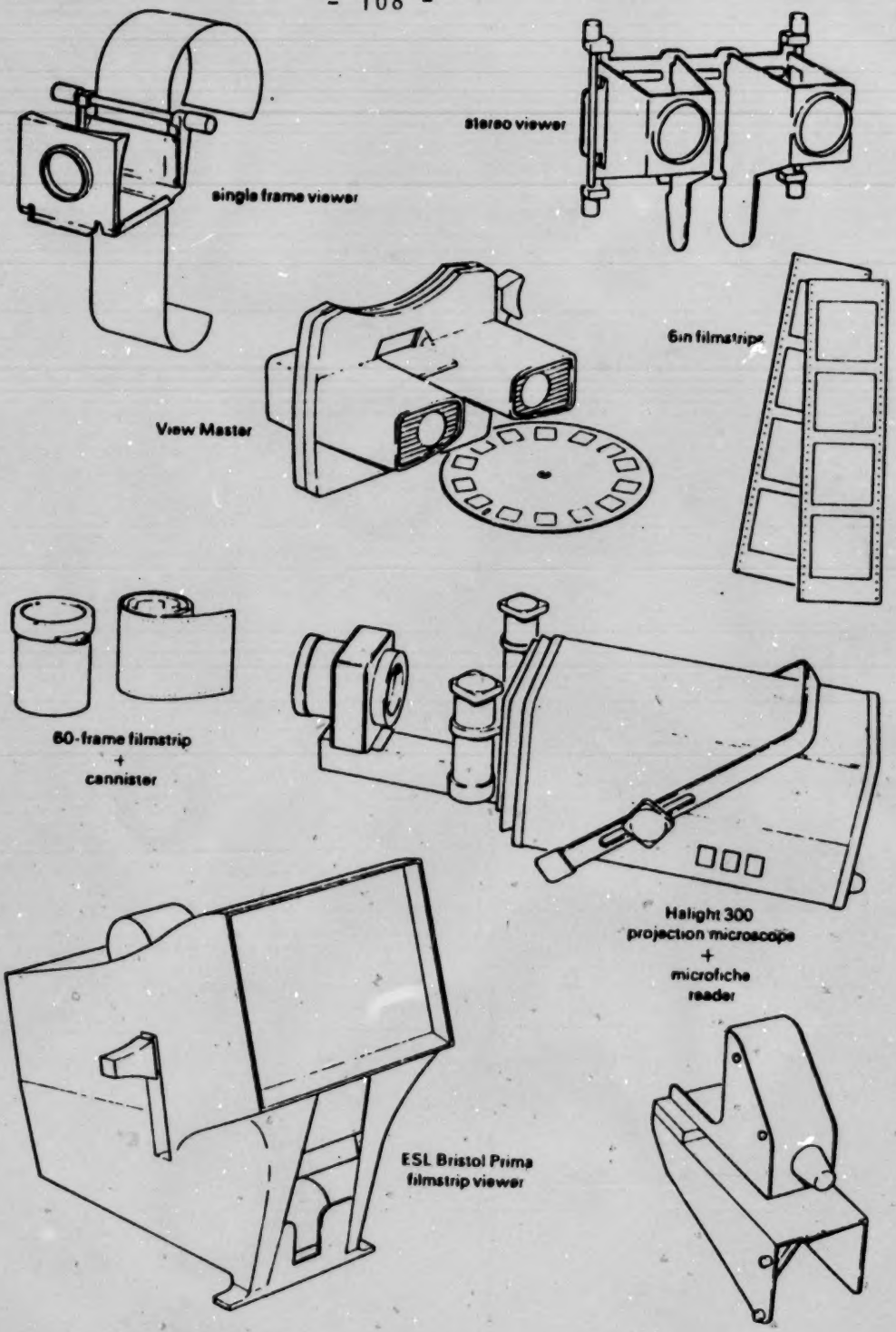


Figure 12: 35MM Colour Film Viewers

(From Bates and Kern, 1977[23])

The visual component could also be in the form of real objects, brought by children or other learners, or supplied by the course designers. These may be familiar objects available locally, like plants, coins, insects, or mathematical shapes or models (which children may have made themselves). In these latter cases, costs would be negligible.

The production of audio-vision is more complex than that of straight radio programmes. Even so, it can still vary enormously in complexity. For small-scale production, it would be possible (but exacting and not to be recommended) for one person to write the script, make a cassette recording, design accompanying diagrams and notes, make additional copies of cassettes, duplicate the notes, and distribute the notes and cassettes to learners. For very large-scale production, especially where specialist departments already exist, as at the Open University or in multi-media production centres, audio-vision programmes can include inputs from subject specialists, producers, graphic artists, editors, sound technicians, photographers, and printers. A successful audio-vision package requires careful preparation of both the audio and visual materials, and good co-ordination and co-operation between subject specialists, those responsible for the production of the audio components, and those responsible for the production of the visual components. Since the material goes through several different stages of production - designing and editing the graphical and print material, recording the sound and handing over to contractors for printing and copying, thence distribution to learners - it is necessary for the material to be produced some considerable time before it is to be used.

Statens filmsentral makes film-strip in conjunction with NRK for radio-vision programmes. It also has the staff and facilities to produce film-strip for other users, but not the audio facilities or print facilities. At Bergen lærerskole, the media course places emphasis on teacher-designed print media and still-pictures in integrated teaching, but only for classroom use. I did not find any organisation though which designed audio-vision materials in Norway for individualised use.

Copying and Distribution

Multiple copies of audio cassettes can be obtained from several places. Bulk buying greatly reduces the cost of cassettes. For instance, a C60 (60 minute cassette - 30 minutes each side) costs about 10 kr. (blank) in the shops. For an order of 100000 though one would pay 3,5 kr. per cassette. Roger Arnhoff A/S, Norsk Språkinstitutt and Polygram A/S all have fast copying facilities. There is plenty of spare capacity, one company alone being capable of making 10000 copies a day. It also pays to shop around. Prices vary according to the number and are open to negotiation, but average about 13 kr. per C60 cassette for copying, including the cost of the cassette, for runs of about 500 copies.

Several A/V centres also do multiple copies of cassettes of NRK school radio programmes. Trondheim is a good example of a well-organised system:

Master tapes of all new school radio programmes are sent by NRK by post to the A/V sentral, which therefore has a master of all school radio programmes back to 1972.

The A/V sentral has a copying machine able to copy (in real time) from the master to three or four cassettes or tapes at one time.

Lists of all the new programmes received are sent once a year to Trondheim schools, including order forms. The school then sends in its order. The scheme covers 60 schools and institutions in Trondheim, including hospitals.

The cost of purchasing the masters, staff and overhead costs, and publicity and stationery costs, are all covered by the kommune. The schools pay for the cassettes or tapes they order, but not for copying costs. Two schools still have just reel-to-reel machines, but the rest have cassette machines. As well as providing cassettes or tapes of radio programmes, film-strips provided with radio programmes are also available for distribution.

Costs are as follows:

	Kr.
Cassette (C60): with or without programme:	6.93
Tape (600 ft.):	20.45
Packaging	1.50

The A/V sentral does not provide accompanying programme publications, which schools have to order direct from NRK.

1000 cassettes were sold last year, and demand is increasing. There is a simple invoicing system, which debits schools directly by computer once a year, saving schools from any paperwork other than ordering.

The scheme has been running for six years, and has been built up from a Swedish system.

Handal found in 1970 that 93% of schools had tape recorders. Philips estimate that 88% of homes in Norway have an audio-cassette machine of one kind or another. Open University experience from providing cassettes on courses shows that adult students not possessing an audio cassette recorder will purchase one if it is needed on a course, since a simple cassette recorder can be purchased for under £10 in Britain. At the Open University, audio cassettes are mailed directly to students, without special packing, by ordinary mail, without damage.

NEW TECHNOLOGY IN AUDIO-VISUAL MEDIA

There are rapid developments in electronic technology which have major implications for distance education. (Those related to the telephone system will be dealt with in the next section.) It is important though to keep a sense of proportion about new developments, particularly in connection with low-cost media suitable for use in the home.

In 1977, I carried out a study on behalf of the Open University of new technological developments, and their implication for home-based learning[23]. A number of new technologies were examined, including super 8 mm. cassette machines, video discs, home-based computer terminals, and slow-scan TV. There were though, apart from telephone teaching, and Viewdata (see next section), very few new developments which looked likely to be available at a sufficiently low cost for widespread home use in the next five to ten years, which would be useful for distance education. The most promising appeared to be scribophone, electronic blackboard, and TV games.

Electronic blackboard

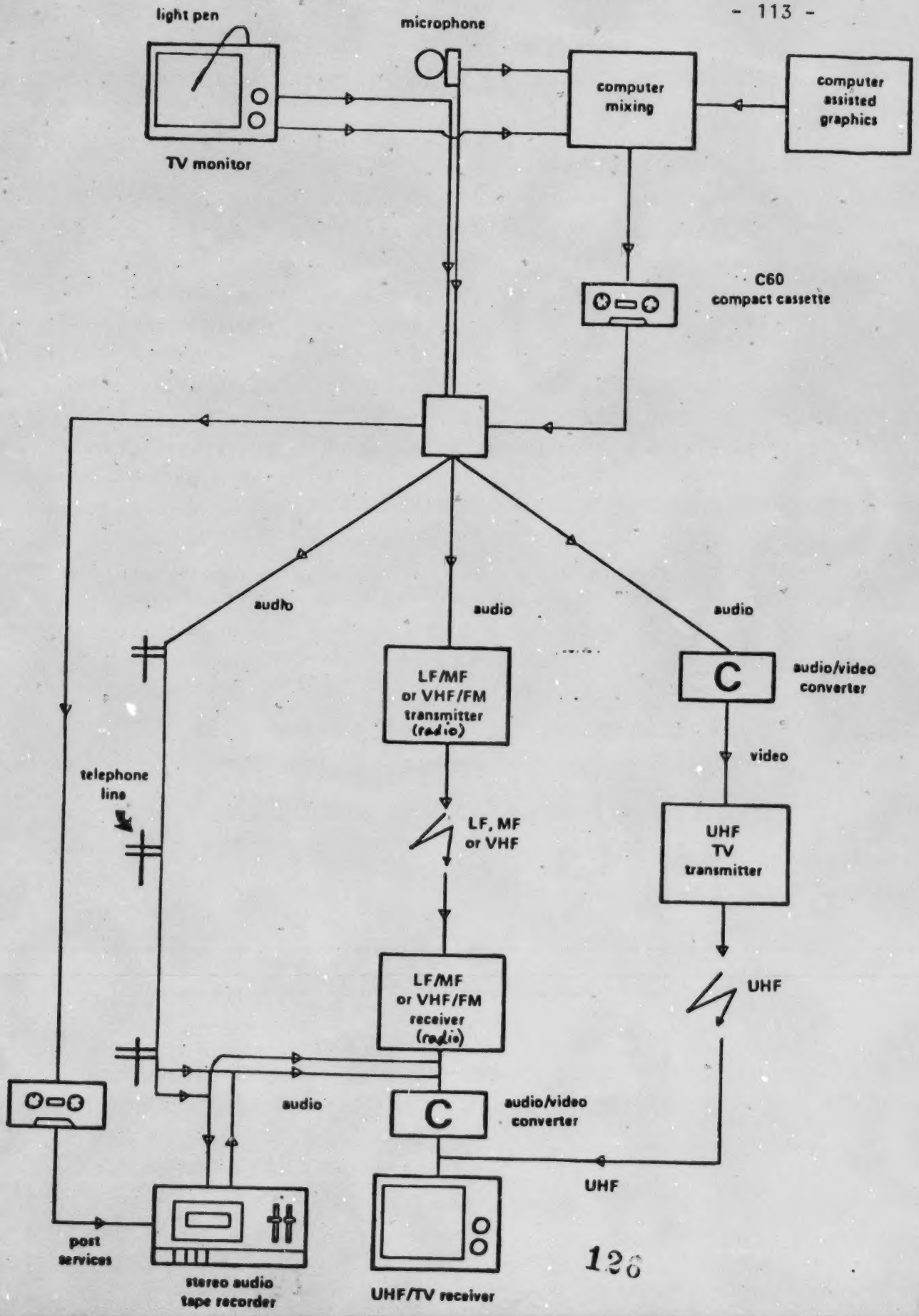
Electronic blackboard is a device which enables handwriting, sketches, and simple diagrams to be displayed on a standard television receiver. This information may be transmitted by telephone lines, radio signals, or audio tape. It needs to be converted by an audio/video converter, for display on a domestic television receiver screen. Display can be in colour, and can, as the graphics are progressively constructed on the screen, provide simple animation. Sound and vision can be transmitted at the same time.

If the material is provided on a stereo audio cassette, or if an audio recording is made of the material as it is transmitted through the telephone line or by radio, then the student can play the material when he wishes. If the source of the material is a tutor using a writing tablet, (containing two mutually orthogonal printed fine wire gratings, capacitively coupled to a ballpoint pen, and transmitted live down the telephone), then it would be possible for the tutor to illustrate an argument to his remote students as they view the material on their television sets. Also, the students could use the telephone link to talk back to the tutor. Programmes could be generated either nationally or locally.

If the tutor is using the writing pad through the telephone system or via broadcast transmission, then the "programme" production is instantaneous. Graphics can be built up by use of a computer, and by using audio cassettes, prior preparation of material is possible. Figure 13 shows the various ways in which such a system, or systems, could be used.

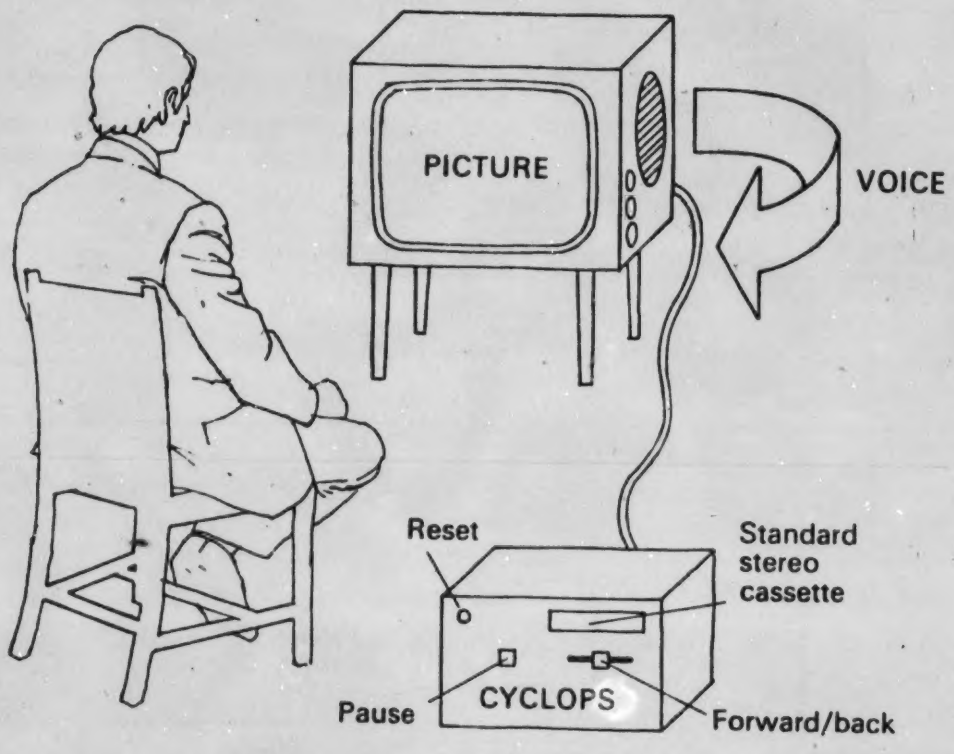
There are several institutions or companies working on different kinds of prototypes. Some have been trialled by the Technical University, Delft, in Holland; Bandung Technical University, Indonesia; the University of Illinois; and the Open University. Philips have a patent on Scribophone, which is a system at the moment limited to writing and talking through the telephone system, although stereo cassettes could also be used. Read, Pinches and Liddell, of the Open University, have developed a more sophisticated system, called Cyclops, which combines most of the features already described.[24] Figure 14 shows how a student would use the system, and Figure 15 shows

Figure 13 Electronic Blackboard System



how a teacher would generate teaching material. (The most complex method is illustrated. Simpler methods, but with less flexibility of production, could also be used.) Reliable costs for Scribophone or Cyclops are not yet available, although Philips estimate that Scribophone will cost around 8000 kr., for the electronic writing pad and the audio/video convertor modem (which each user would need). Read and Pinches estimate that when in large-scale production, their "student" modem cost around 500 kr, and the full generating system around 30000 kr. In addition, there would be tax for both systems to be paid. Informal discussions have been held between ELAB, Norges Tekniske Høgskole, A/S Tandbergs Radiofabrikk and the Open University, about a possible trial run on a teaching scheme in Norway in 1979. A full report on these systems will be available later from ELAB, as a result of a conference held in Oslo in October, 1978.

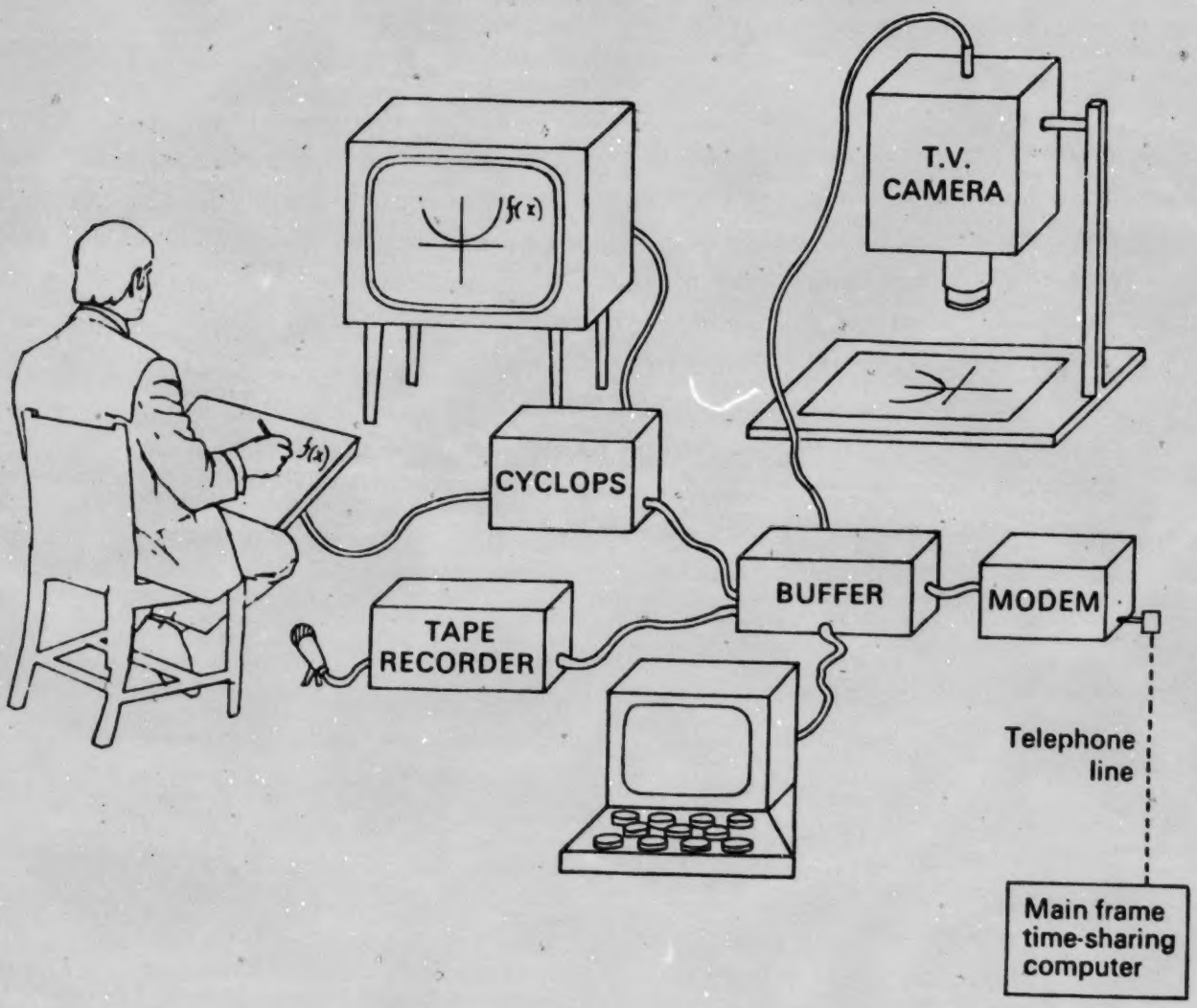
Figure 14. The basic CYCLOPS system allows the student to play audio-visual tapes. (Total cost £40–£300 depending on numbers produced.)



From Read[24].

Figure 15: CYCLOPS - Teacher generation of material

A complete recording and central communications centre, with T.V. camera input, would enable the teacher to make very sophisticated tapes with graphics stored on the computer. (Total cost about £2,500–£3,000.)



Television Games.

A related development is the kind of television game that at present is used as a toy, either in hotels, or as "plug-in" devices to the domestic television set - games such as "Cowboy", tennis, and tank battles, using the television set as a display unit, and a control panel to govern the movement of a dot on the screen. The designers of these games are now beginning to use audio cassettes, which have a greater capacity for storing

information, and micro-processors, which reduce the cost of of processing the information. The result of this is that it will soon be possible to produce a much wider range of possible games, or functions, at roughly the same cost as at present. Thus with such a system, it will be possible to change the programmes easily, so that using basically the same control unit, educational activities could be provided, as well as or instead of games. Thus for instance a cassette might contain the information which results in a graph being displayed of a mathematical function with certain values. By using the control panel, the values of the equation could be changed, and the student could watch the change in shape that results. An audio cassette is capable of storing many hundreds of such programmes. The advantage of the television game system is that most of the cost goes into the materials used - the control panel, in particular. Being mass produced for a domestic use, unit costs are very low (around 200 kr.), and so educational use, although different, would be very cheap, by using mass produced equipment.

Forecasting in this field is very difficult, being so heavily influenced by developments in the fastest growing technology of micro-processing. Nevertheless, the requirements of a very low-cost, reliable and yet flexible home-based teaching technology are very demanding, and the number of inventions and developments that have survived so far is very small.

COMMENTS AND CONCLUSIONS

1. Video or broadcasting?

Video cassettes have considerable educational advantages over both broadcasts and film. With regard to broadcasting, the teacher has the advantage with cassettes of being able to use the programme material when it is suitable, to select just that part of a programme which is relevant, and the chance to use the programme material as many times as necessary. As far as the adult student is concerned, if he has access to a video-cassette machine, he is not bound by the times of transmission of broadcasts, he can stop, replay, and revise the programme material, and in general can fit in the programme material at the time when it integrates best with the rest of his studies. Video cassettes turn a transient, fleeting medium into a permanent medium, over which teacher or learner have control.

Despite these advantages, there are real difficulties in using video-cassette machines. There are different problems for schools than for adult learners. A school with a VCR machine may record schools broadcasts off-air at the time of transmission. In any one school year, there is a maximum of 200 programmes broadcast, but new productions in any one year are not exceeding more than 50 at the moment. Since not all programmes will be wanted in any case, most schools can probably manage with a stock of 50 cassettes, each capable of one-hours' recording time, at a cost of about 7000 kr. initially, and perhaps 10 new tapes a year (1300 kr.). Alternatively, the school could borrow tapes from a local A/V centre, if there is one. As well as being cheaper - each school does not have to keep a large stock of tape, except for those programmes which have proved to be particularly useful - using a local A/V centre is more convenient. The local A/V centre can make sure that every programme is available, while it is easy for programmes to be missed in individual schools. Unfortunately, the majority of schools with machines are not covered by A/V centres, which tend to be based in the larger towns, and serve only their local kommune. Nor is there any national centre which can provide this service

as there is with film. There is much to be said for broadening the coverage of local A/V centres, so that they serve a wider community than just their local kommune. Video recording and copying equipment is expensive, and it pays to maximise its use. For instance, if Trondheim A/V centre were to buy video requirement it would make more economoc sense for it to cover areas such as Oppdal, Støren and Røros, than for each of these centres to set up their own centres. Costs could be recovered by a similar system of charging as is now used for individual schools within the kommune. If though this cuts across local autonomy, then there is a strong argument for setting up a national copying and distribution service for schools, particularly for areas where it is difficult or uneconomic to set up their own A/V centres. There is at the moment though no such State institution capable of doing this, although it is a function that Statens filmsentral may want to take on. It would be quite expensive to run. The cost would not be so much for copying machines - 10 VCRs would be more than adequate and cost no more than 80000 kr. - as for tape. With perhaps 600 schools already with machines, just 10 requests per school would require 780 000 kr. worth of tape. (Even this though, as we shall see, is cheaper than film distribution.) Whether or not to set up a national copying system, or to leave schools to record programmes themselves, or whether to rely on locally-run A/V centres to provide a copying service in some areas but not others, are issues which can only be resolved again if there is some sort of policy regarding the role of schools broadcasting. If it is not to play a more central part in the work of the schools, it seems hard to justify a national copying service, on top of local A/V centres and schools recording. Also, it depends politically how much duplication and lack of coverage one is prepared to accept in return for devolution. What is clear is that while there is a schools television service, there will be a continuing growth in the purchase of video equipment by schools, and that most areas of Norway are likely to be covered in the next few years.

The problems in using video cassette machines for adult education are much more difficult than for schools. Home-use of

video cassette machines for adult education only becomes feasible if or when a substantial proportion of homes in Norway have a machine already, probably bought primarily for recreational reasons. Since NFU in particular is supposed to reach out to disadvantaged students, assuming they already are sufficiently wealthy to own a video-cassette machine does not seem to be a sensible proposition. An alternative is for adult learners to use a local centre, such as a school, which already has a video-cassette machine. Quite apart from the fact that this puts students in the more remote and isolated dwellings at a disadvantage, there are other practical problems. Although in principle schools may be willing to allow adults to share facilities, this may prove particularly difficult with regard to video cassette machines. These are valuable and highly desirable machines which can also be used in the home. They are easily portable, at least as far as the boot of a car. Some form of security will inevitably be necessary, and there will in any case always be potential adult learners without a video cassette machine in their vicinity, or who cannot get to a local centre without a great deal of inconvenience.

For this reason, broadcasting remains the only sure way of NFU being able to reach <u>all</u> potential students with audio-visual materials. However, there is a price to be paid for this, both educationally and economically. The educational price has already been mentioned - the transient nature of broadcast television, and the lack of control of the learner over the learning material in the programme. The economic price is more difficult to describe precisely. To do this, again a number of assumptions have to be made.

With more than 600 schools equipped with video-cassette machines, and assuming a workable system of access to adult learners and a suitable system of security for equipment, (both large assumptions in themselves), it is possible to think of a system of distribution of television on cassettes to local centres for adult learners, distributed either from a national copying centre or from local A/V centres, but with programmes produced either by NRK, or by an independent film

company, or by a non-broadcast video production organisation.

The first difficulty in doing this is NRK's proposed basis of costing. Not unreasonably, their costing proposals assume that programmes made will be broadcast. What is wanted for the analysis is a production cost without the programme necessarily being croadcast. Thus, on the system proposed, the only figures known on which one couldestimate the cost of a non-broadcast programme made by NRK are the cost of producers and the programme budget (for a series of eight programmes, 450000 kr.) Their technical costs are included in the overall cost based on the number of hours transmission. It is inconceivable though that NRK would not charge technical costs for the use of studio production. Furthermore, the policy issue of whether NRK is willing or even able to produce programmes which will not be broadcast has yet to be decided. However, it is possible to make a reasonable guess at what the costs are likely to be, given the costs of hiring a commercial video studio in Britain, and in Norway, and the technical costs NRK themselves have proposed for broadcasts. My estimate is that the technical cost for one programme produced in an NRK studio, with full facilities available, would not be more than 50000 kr. This is the figure I have used as a basis for the cost of a non-broadcast programme production, plus the programme budget and producers' costs. (It must be remembered for instance that technical costs for a programme broadcast twice would be no more than 76000 kr.)

Using this as a base, it is possible to estimate costs for six combinations of production and distribution:

a. Television production: direct transmission. Two transmissions of each programme, each year, over four years.
b. Television production: direct transmission. One transmission of each programme, each year, over four years.
c. Television production: cassette distribution. NRK produced programme, cassette distribution from centre to local centres.

d. Television production: cassette distribution. NRK produced programme, cassette distribution to individual adult learners at home.

e. Film production: cassette distribution. Film company produced programme, cassette distribution to local centres.

f. Film production: cassette distribution. Film company produced programme, cassette distribution to individual adult learners at home.

The last four systems assume a national copying service. This is being proposed in any case (see pp.126-128), and in the cost assumptions, no costs are included for the overheads of the central service, since these will be paid in any case. Costs for film have been included, because this gives a maximum cost independent of NRK altogether. All-film production is generally much more expensive than studio-produced television, but film can be transferred easily to video. I did consider costing for television produced by a non-broadcast video-production company, but decided not to, for the reasons given on p.126. The costs would almost certainly be lower than for any of the systems proposed in a.-f. The following assumptions have therefore been made.

i. A series of eight programmes, each 20 minutes in length, available for four years

ii. Programme costs broadcast transmission only): 126 000 kr. per hour.

iii. Programme costs (non-broadcast television only): 50 000 kr. per programme x 8 = 400 000 kr.

iv. Film production costs: 175 000 kr. per programme x 8 = 1 400 000 kr.

v. Three sixty minute video-cassettes for eight programmes, tape life four years

vi. Each cassette, including postage and return postage, costs 130 kr., allowing for bulk purchase.

vii. On systems c. and e., cassettes would be sent to centres and stored; students could go and use them when convenient; each cassette would stay in the centre for four years; each active centre (i.e.centre with local student following course who wants to use centre) has a copy of each programme for the course, two for courses with more than 25 students per center.

viii. On systems d. and e., cassettes would be mailed to and returned by individual students, at the end of the year; cassettes would not be stored at centres, might be used at home or a local centre, would not be recycled during the year, but would be reissued to new students each year.

Production costs are fixed, irrespective of the number of students, as too are television production costs. Thus for eight programmes, broadcast costs are 126 000 kr. per hour of transmission, 850000 kr. for non-broadcast television production, and 1400000 kr. for all-film production. I have assumed a limit of 1000 local centres, and an average of 10 students per centre for systems c. and e., except for courses with more than 25000 students.

On this basis, we arrive at Table 7, with costs for different course enrolments. These are presented graphically in Figure 16. They need a great deal of care in their interpretation. First of all, these are estimates. Experience suggests the further the assumption on which an estimate is based from direct experience of the proposed system, the greater the likelihood of underestimation in costs. NRK figures are more likely then to be accurate, and cassette figures, particularly in the use of local centres, are more likely to be underestimated. Secondly, one is not comparing strictly similar educational services. Direct transmission is likely to reach every student, and be more convenient. Cassette distribution to centres will disadvantage possibly up to a quarter of potential students, from Open University experience. Nevertheless Table 7 does indicate a number of areas for at least discussion.

	500 students 50 centres	1.000 students 100 centres	5.000 students 500 centres	10.000 students 1.000 centres	50.000 students 1.000 centres
a) Broadcast: two transmission	2.688.000	2.688.000	2.688.000	2.688.000	2.688.000
b) Broadcast: one transmission	1.344.000	1.344.000	1.344.000	1.344.000	1.344.000
c) NRK production: cassettes to centres	869.500	889.000	1.045.000	1.240.000	1.630.000
d) NRK production: cassettes to homes	1.045.000	1.240.000	2.800.000	4.750.000	20.350.000
e) Film production: cassettes to centres	1.419.500	1.439.000	1.595.000	1.790.000	2.180.000
f) Film " " " " homes	1.595.000	1.790.000	3.350.000	5.300.000	20.900.000

TABLE 7: COMPARATIVE COSTS FOR BROADCAST AND VIDEO DISTRIBUTION

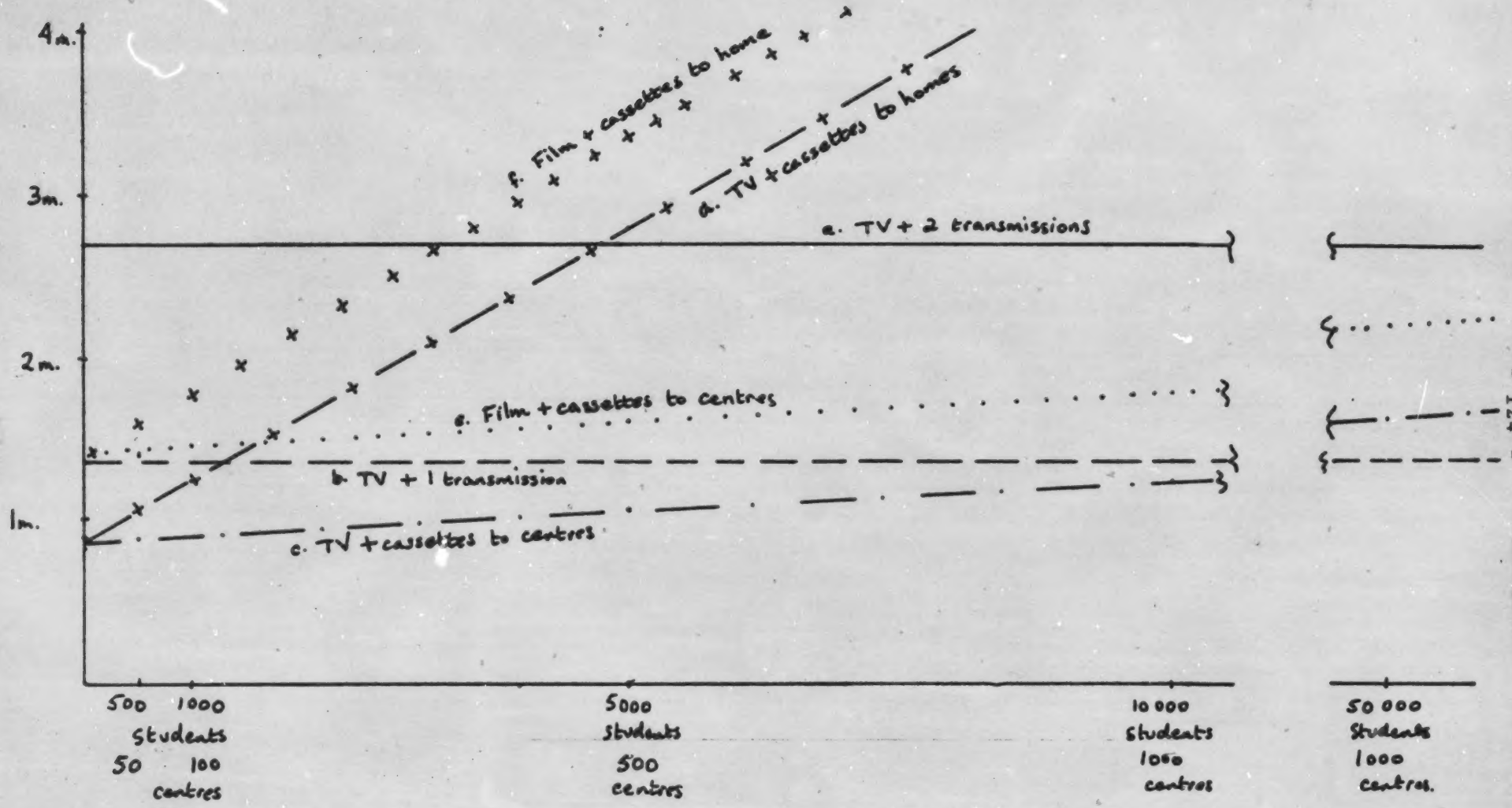


Fig. 16. Comparative Cost Estimates for Various Methods of Video Distribution.

The surest way of getting audio-visual materials into students' homes - the best place for distance education, in terms of convenience for the student - is by broadcast transmission, every programme receiving two transmissions in different time bands. Students can see the programme only for twice, at the most, and cannot exercise much control over their learning from television presented in this way. It also turns out to be the most expensive system, for courses with less than 5000 students. However, it will also remain the only system until there is widespread home availablity of video-cassette machines.

Clearly the cheapest way, given the proposed system of costing by NRK, is the distribution of cassettes to local centres, and this is still likely to be so, even if I have seriously underestimated the costs of this system. As well as being cheap, it allows students who can get to the centres to make full use of the video material, and to use it whenever and as much as they want. However, this will disadvantage some students, it needs the creation of a national copying and distribution centre, and will be very difficult to organise.

The best system educationally is a hybrid: a combination of direct transmission, with a back-up of cassettes at local centres. Surprisingly, a combination of one transmission plus a local centre service of cassettes is cheaper than two transmissions, for courses up to 10000 students:

Table 8: Comparative costs between two transmissions and one transmission plus cassettes (video)

	500 students 50 centres	1000 students 100 centres	5000 students 500 centres	10000 students 1000 centres	50000 students 1000 centres
"Hybrid" system	2 213 500	2 233 000	2 389 000	2 584 000	2 974 000
Two transmissions	2 688 000	2 688 000	2 688 000	2 688 000	2 688 000

One strategy then would be to begin with two transmissions unt the practical problems of a local system had been tried out perhaps in just one area, then to switch later to a hybrid sys n if local centres proved to be a feasible proposition.

astly, the question must again be raised as to whether NRK's proposed system of costing is the most realistic, either for N or for NRK itself. NFU is likely to have a large number of co ses with less than 5000 students, and if video-cassette machi s do become common in Norwegian homes, it will be cheaper to dis ibute on cassette than to transmit. I cannot help wonder though hether NFU is really getting the benefit of the marginal use of exi ing broadcast resources, or is being expected to pay for ove eads and development costs which NRK has to cover, whether r not NFU uses NRK's services.

Th temptation must be to use an alternative source of video pr luction. There is though at the moment no video producti company, organisation or facilities that could anywhere ear match the educational services and production standard: hat NRK could provide. To build up such a service, through f example Statens filmsentral, would be very expensive. It is, in y view, much better to use the experience and facilitie: of NRK, but to discuss whether a better system of costing ca be worked out, which places less of a burden on NFU, which akes account of the video revolution which is happening, en if quietly, in Norway, and which at the same time ensures tha NRK is not out of pocket as a result.

2. Video or ilm?

The inc asing availablity of video cassette machines in Norwegian sc ols raises the question: should Statens filmsentral provide a vi o copying service? For once, the answer is clear: yes, it shoul for a number of reasons. However, it will mean important cha es in Statens filmsentral's role and functions.

There are several sources of material for cassette distribution. One s rce is Statens filmsentral's own film archive.

Film can be transferred to video tape by means of a telecine machine, costing about 120000 kr. The advantage of cassettes over film are several. From the teachers' point of view, operation of a VCR machine is simpler. Selection and searching for parts of a programme is much easier with cassette than with film. Only a part of a cassette can be shown, without having to start from the beginning, as with film. Video can also be shown in normal lighting.

From a distribution point of view, video cassettes have many advantages. The cost of three 20 minute programmes on cassette, in terms of the cost of the cassette itself, is about 100 kr. (assuming bulk buying). The equivalent cost for colour film is 3480 kr. Because of the high cost of film copies, Statens filmsentral can buy only a small number of copies of film. If several requests arrive at once, and all copies are out, the school must wait, with film. With video, a small stock of copies of the most popular programmes can be kept, and unevenness in demand can be met by recording extra versions very cheaply on blank cassettes, which can be re-used when returned for other programmes. In other words, it enables all requests to be met immediately, and gives flexibility in terms of tape stock. Furthermore, schools could afford to buy cassette versions of films that they found particularly useful, enabling them to be used as a resource whenever the material was required. Making films available on cassettes to schools with video-cassette machines would probably pay for itself in terms of reduced stock of copies of new films, over a few years.

Another source of material for cassettes, of course, would be copies of NRK schools and adult education programmes (when the latter are allowed to be copied). Although schools themselves can record off-air, it is not always convenient or practical to do so. Furthermore, the availability of a central copying service would enable schools to reduce the amount of cassette stock that they need. Lastly, a central service would provide a service to those many areas that are not or could not be serviced by a local A/V centre.

Problems of copyright would have to be resolved, of course. However, the increased use of material will also clearly bring advantages to the creators of the original material.

To do this, Statens filmsentral will need to purchase a telecine machine, VCR machines and cassettes, and hire at least two recording technicians and a clerk/administrator to handle requests. Fortunately, the major cost will turn out to be cassettes, fortunately, because these can be built up gradually over the years in response to demand (as can machines). A very comprehensive service however should be possible for an initial cost of 1 million kr. in the first year, and a yearly cost there after of under 500000 kr. a year, including salaries and cassettes. Thereafter, costs are also related to demand.

In the meantime, because of the large number of schools still without video-cassette machines but with 16 mm. projectors, film distribution should carry on as normal. Film distribution though is of little practical value for home-based learners.

3. The value of audio-vision and the promise of new technology.

Audio-vision has tremendous potential for distance education, and particularly for home-based learners. Perhaps the most important advantage of a deliberately planned, integrated use of audio-cassettes and print or film-strip is the control the learner has over the process. He can stop, go over a piece of work as many times as he wants, return to it later, and most important of all, can work on it at home at the times most convenient to the learner. Because the learner can stop and come back to the cassette, the material can be structured to give the learner more active involvement, carrying out short exercises, returning to the tape to check his answers, and so on. Therefore, carefully structured, effective teaching strategies can be built into the audio-vision material. Furthermore, it is easy to produce. Teachers have more control over the material than over, for example, the production of a television programme. This means of teaching has proved to be very popular

at the Open University, being far more highly rated than radio, and on some courses more highly rated than tutorials or television, by students.

Audio-vision also has the advantage of being cheap. To give an estimate of costs, I have made the following assumptions:

i. A total of 320 minutes sound, on 6 x C60 cassettes (equivalent in time to 16 radio programmes of 20 minutes) at 7 kr. a cassette for quantities up to 20 000, and 5 kr. a cassette for over 20 000 (including outward postage to students' homes)

ii. Students keep the cassettes, so new cassettes issued each year.

Since most distance education courses will require print material in any case, these costs are not included here. Also, as sound production costs are negligible, these are not included either. This results in Table 9:

Table 9: Cost of cassettes as audio-component of course

Cost per cassette:	7 kr.	7 kr.	5 kr.	5 kr.	5 kr.
No. of stdts. per year:	500 students	1000 students	5000 students	10000 students	50000 students
Cassettes					
1 year	21 000	42 000	150 000	300 000	1 500 000
4 years	84 000	168 000	600 000	1200 000	6 000 000
Radio					
4 years	798 000	798 000	798 000	798 000	798 000

It can be seen that for courses of up to 6 500 students a year, it is clearly cheaper to send cassettes than to use radio. The result of NRK's proposed system of costing can be seen clearly here, for in the Open University, it becomes more expensive to send cassettes when course size exceeds 500. Of course, using NRK one is also using a fully professional studio, having the advantage of a professional producer, and the publicity value of an eavesdropping audience. For a course of 5000 students, this will cost 33% more than giving students their own cassettes.

The cost advantage of using film-strip, with a very cheap plastic viewer costing 1,5 kr., is not so clear. There is a very large discrepancy between the price paid by the Open University for film-strip, and the price charged by Statens filmsentral. Statens filmsentral charges 30 kr. for a film strip of about 20 frames (35 mm.). The Open University can buy a strip of 180 frames (35 mm.) for £1.80 (18 kr.), which does not though include the cost of design, merely of printing, plus a small container. It should be possible to produce film-strip on a large scale for less than 30 kr. for 20-30 frames, but I have used this price, and the UK price, assuming a total of 180 frames altogether being distributed individually to students, and kept by them:

Table 10: Cost of film-strips as a visual component of course (over four years)

	500 students	1000 students	5000 students	10000 students	50000 students
Statens f.s.	360000	720000	3600000	7200000	36000000
Open Univ.	36000	72000	360000	720000	3600000

Even if the Open University price could be obtained, it is likely that colour printing, used selectively, would be cheaper for courses with more than 5000 students a year. Nevertheless, the importance of even small reductions in price for bulk buying can be seen in this example. Fortunately, audio-vision does not depend on the availability of colour film-strip or even colour printing, so its general cost advantages are not affected by the high cost of film-strip in Norway.

Audio-vision, which requires the tight integration of print and audio cassette, and the benefit of graphics input, editing, and subject expertise, seems ideal for the NFU model of project course design. There are problems though. In practical terms, the design of such materials is much easier if the necessary facilities are all available in the same place. The professional input of a graphics artist and a sound producer can help improve the quality of audio-vision considerably. There is though, as

far as I am aware, no audio-visual production centre in Norway which combines a range of facilities, such as graphics design studio, a range of print facilities from multi-lith to full colour printing, and simple sound studio, and photographic processing and development. Again, this is a possible role for Statens filmsentral.

The new technology, particularly electronic blackboard devices, also hold out promise for distance education provided that certain basic requirements can be met. First of all, the equipment needed in the students' home must be low-cost. If it was provided as a "kit", which is returned at the end of the year, the costs can be spread over the life of a course. If we then assume a cost of 1000 kr. for some form of electronic blackboard device to be used in the home, in conjunction with a television set, costs for the machines alone would be as follows:

Table 11: Costs for electronic blackboard replay device (over four years)

	500 students	1000 students	5000 students	10000 students	50000 students
El. b'board	500000	1000000	5000000	10000000	50000000
Broadcast-television	2688000	2688000	2688000	2688000	2688000

It can be seen then that unless the price can be kept well below 1000 kr. for the replay device, it will only be more economical than broadcast television for courses with less than about 2500 students, over a four year period. In fact, costs in practice will be much higher, for as well as the cost of cassettes, there are design costs and, above all, the administrative costs of distributing and collecting the machines each year. Nevertheless, at this stage it is not so expensive that one should not experiment with it. The second requirement is the development of suitable teaching material

for the new devices, but this is best tackled on an experimental project basis. NFU does seem to be in an excellent position to try out and develop such systems, providing the third requirement can be met. That is that some manufacturer must show some interest in manufacturing enough machines to make a practical field-test feasible. Probably two stages of development are necessary. First, a small scale, local test using perhaps 10-20 prototype machines on a local basis, probably to groups, with a limited range of programmes - perhaps six or so. The second would be a full field-test, on a full course, integrated with other teaching materials, on perhaps 1000 students. This all depends though on the extent to which NFU sees itself as a pioneer in the development of new teaching methods, or whether it sees its function primarily as being to rely on well-tried methods of distance education.

4. The future of Statens filmsentral.

The recent development of new technologies for education, and particularly the increase in the numbers of video-cassettes machines in schools in Norway, developments in audio-vision in the Open University in the United Kingdom, and most of all the setting up of NFU, all suggest a need for a central State institution which has operational responsibility for distributing audio-visual materials, and which provides an integrated locus for production. This is not to duplicate NFU's own role, of co-ordination and setting priorities for distance education. But NFU is not planned or intended to be a production and distribution centre. There is then a clear gap in Norway in the area of non-broadcast audio-visual media, both for production and distribution.

The obvious organisation to take on this role would be Statens filmsentral. However, its very name indicates part of the problem. The new role suggested would broaden and change its activity so fundamentally, that it might be more sensible to talk of the need for a new institution, of which film distribution would be but one part. What I am suggesting is the need for a national audio-visual centre for education. Thiswould

include distribution and commissioning of educational films, and the other present functions of Statens filmsentral, but would also include a national video cassette copying and distribution service, and a centre for the design and production of audio-vision, incorporating a graphics design studio, small sound studio, and low-cost printing and duplicating services, plus a small computer or computer link for computer-generated graphics. I have reluctantly made this suggestion, because I am aware of the current financial position in Norway, nor am I keen on setting up large bureaucracies. It does seem though that both adult education and the schools need a central, focal point for the development and distribution of low-cost media. If Statens filmsentral can be re-organised and expanded, this would be the obvious base. If not, a new institution should be created.

Secondly, with the increase in the range of new technology, including computers, which have relevance for education, it seems important to me that as well as a production and distribution centre, there is a need for some kind of board or institution to give pedagogic advice on priorities and choice of media. NFU is in a position to do this for adult education. I am not sure who is responsible for doing this in schools education. However, it is possible to envisage a structure whereby NFU provides priority and guidance in adult education, and some existing or new board or council does the same for schools education, including priorities for schools broadcasting as well as for other audio-visual developments. Developments in media are likely to continue to grow rapidly, and to have a continuing impact on the educational service as a whole. It is important then that both the government and the schools are well-informed and well-prepared for such developments. The precise nature of the organisation and structure of such a system is best left to be worked out in the context of Norwegian government and social institutions, but the kind of thing I have in mind is sketched out in Figure 17. One advantage of a separate board for schools is that it takes the difficult issue of schools broadcasting out of NFU, which must give priority to adult education, and puts it back where it should be, as a part of the formal schools education system.

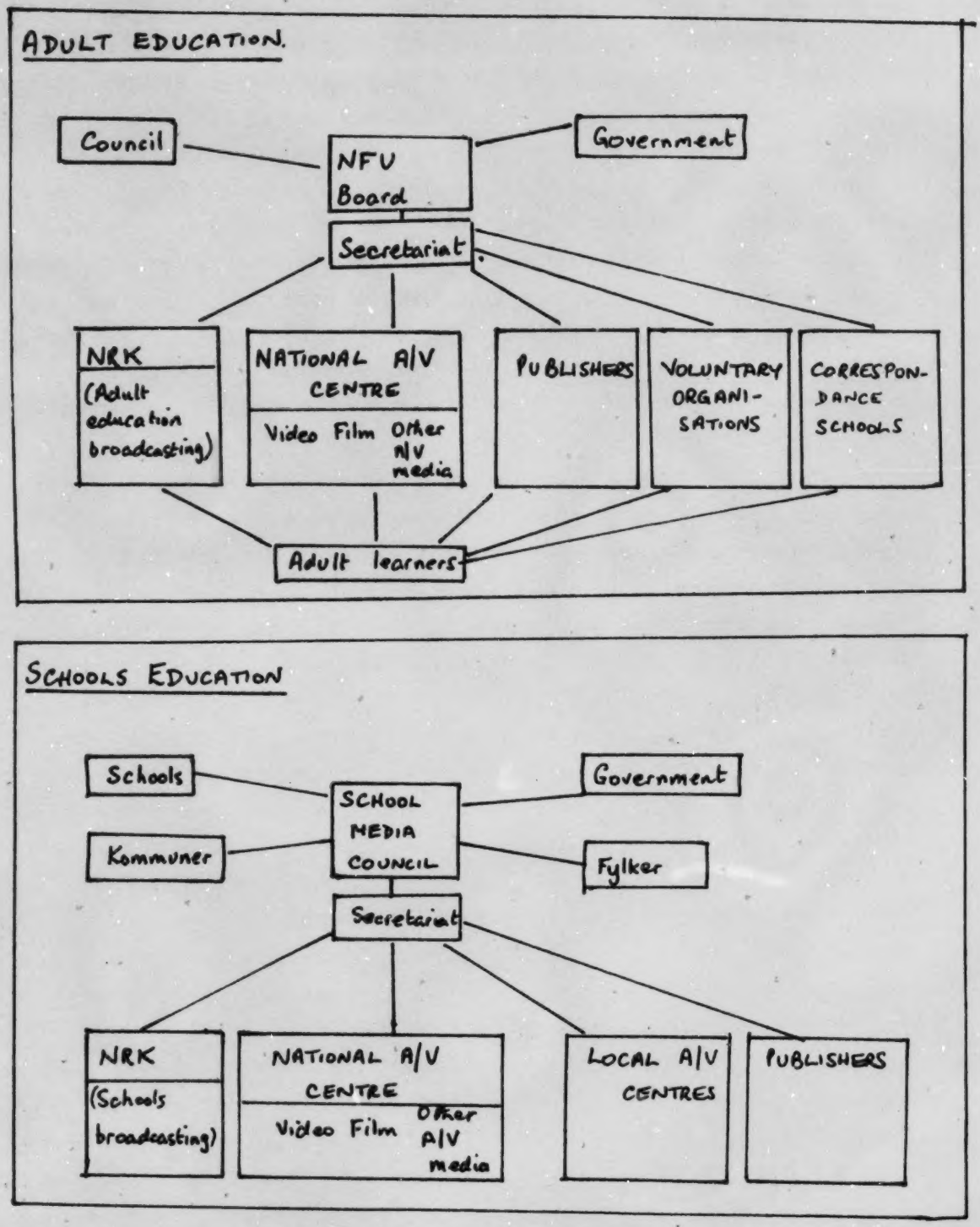


Fig. 17. ORGANISATIONAL STRUCTURE FOR POLICY AND CO-ORDINATION OF EDUCATIONAL MEDIA

REFERENCES

9. KUD St.prp.nr.1 (1978-79) for budsjetterminen 1979. Oslo: KUD, 1978

20. KUD Læremidler i skole og voksenopplæring: NOU 1978:26 Oslo: KUD, 1978

21. GIRE DAHL, A. Skolen som marked. Bergen: J.W.Eide, 1978

22. STATENS FILMSENTRAL Arsmelding, 1977. Oslo:Statensfilmsentral, 1978.

11. HASLE,J.A. and SEIM,A. Kartlegging av bruk av skolefjernsyn. Oslo: NRK, 1976.

12. KUD Rundskriv F37/78: Adgangen til å fremstille lyd- og billedopptak av skolekringkastinsprogram m.m. til bruk i undervisningsvirksomhet. Oslo: KUD, 6 mars, 1978

23. BATES,A.W. and KERN, L. Alternative media technologies for the Open University. Milton Keynes: Open University, 1978.

9. HANDAL, G. Bruksfrekvens og bruksform for Norsk skoleradio. Linköping: Pedagogiska institutionen, Linköpings högskola, 1973.

24. READ,G. Cyclops: An Audio-Visual System. Milton Keynes: Open University, 1978

25. GRUNDIN, H. Broadcasting and the Open University student: The 1977 survey. Milton Keynes: Open University, 1978

SECTION 6

TELECOMMUNICATIONS

6. TELECOMMUNICATIONS

FACILITIES IN NORWAY

Access to telephones

Research carried out in 1973 showed that 57% of households in Norway had telephones[26]. In addition, another 12% had access to a telephone.

Costs

One factor governing costs is distance. Televerket (the State telephone monopoly) uses four categories:

Kommune: calls within the local administrative district
Nabolokal: calls to neighbouring kommunes
Riks 1: calls other than to neighbouring kommunes or within the kommune, but less than 50 kms. in distance.
Riks 2: calls over 50 km.

The second factor is the time of the day. There are two rates: "peak" and "off-peak". However, times for "off-peak" vary according to the distance category. Thus, in all distance categories, all Saturday and Sunday, and all times between 8.00 p.m. and 8.00 a.m, weekdays, are "off-peak". However, kommune and nabolokal "off-peak" times on weekdays begin at 5.00 p.m. Thus local calls are cheaper after 5.00 p.m.; long-distance calls are cheaper after 8.00 p.m.

The third factor is length of time - the longer the call, the more it costs, in general.

Since distance education will almost certainly take place mainly in the evenings and at weekends, I have summarised costs for different lengths of call for just off-peak, cheap rates, in Table 12.

Table 12: Cost of cheap-rate telephone calls in Norway

	10 min.	20 min.	40 min.	60 min.
Kommune	0,67	0,67	0,67	0,67
Neighbouring kommune	0,67	0,67	0,67	0,67
Within 50 kms.	8,71	16,75	33,50	50,25
Over 50 miles	15,41	30,15	60,30	90,45

In addition, facilities exist for conference call, i.e. there is a service which allows up to nine subscribers, each on a different number or in a different location, to be connected simultaneously, in such a way that each person can talk to and hear all the others who are connected. At the moment, there is only one exchange in Norway capable of handling this kind of connection. It is located in Oslo, but can connectnine subscribers together from anywhere in Norway. It is manually operated. Orders have been placed for five more exchangesof this kind, to be placed in Stavanger, Bergen, Tønsgberg, Trondheim and Tromsø. So far, conference call has been used mainly for business purposes, but it has also been used by the medical profession for consultation between hospitals in Hammerfest, Bergen and Tromsø.

There is a standard cost, irrespective of time of day or of distance. This is 4 kr. per subscriber for connection, and 6,05 kr. per subscriber for each 3 minutes.

Loud-speaking telephones can also be purchased in Norway, and cost between 2000 kr. and 4000 kr. each.

Other services offered are the transmission of facsimile text and still pictures by telephone, and data transmission by telephone line.

Traffic capacity.

Figure 18 below shows a typical pattern of traffic over Televerket's lines at different times of the day, during weekdays:

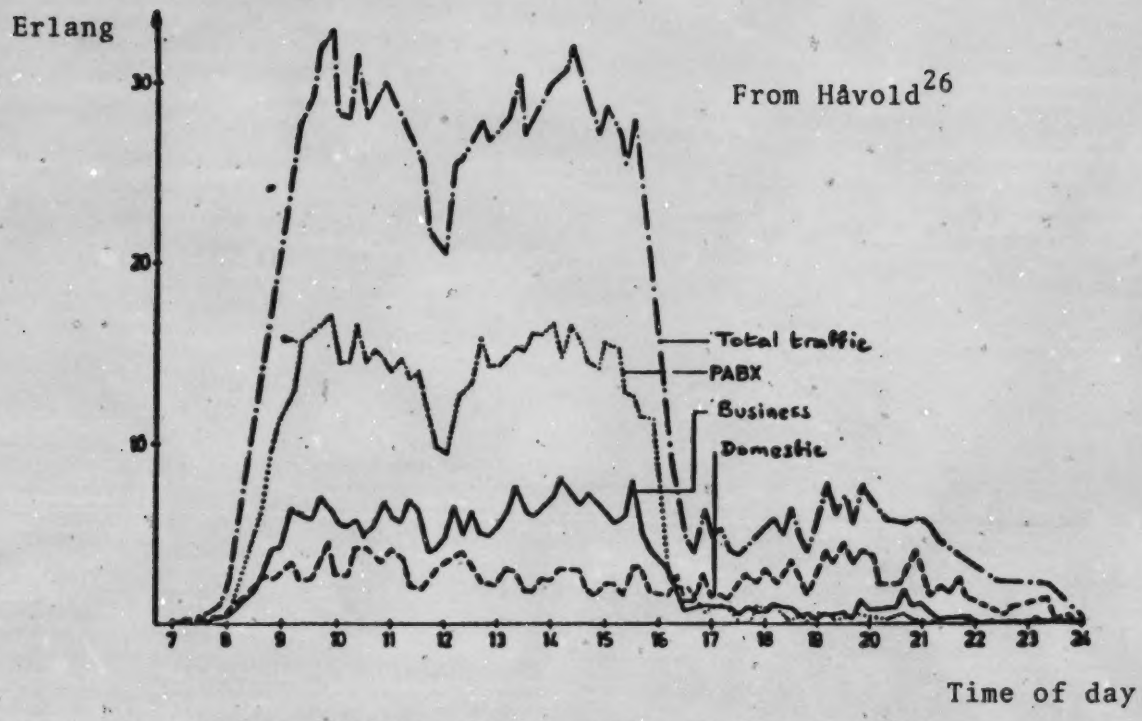


Fig. 18. Pattern of telephone traffic during the day.

From this, it can be seen that there is plenty of spare capacity after 17.00, which is the time most useful for distance education purposes. Even at the peak evening time (19.00 to 21.00) there is reckoned to be 50% spare capacity, at least.

TEACHING BY TELEPHONE

There are few examples yet, anywhere in the world, of the systematic use of the telephone for teaching, but there has been growing experience in a number of educational institutions, such as the University of Wisconsin, in the USA. the Open University in Britain, and the University of Linköping in Sweden.

I shall summarise here six different ways in which telephone teaching might be used for distance education in Norway, with comments on experience, and likely costs, given current methods of costing telephone services in Norway. The six methods are summarised in Figure 19.

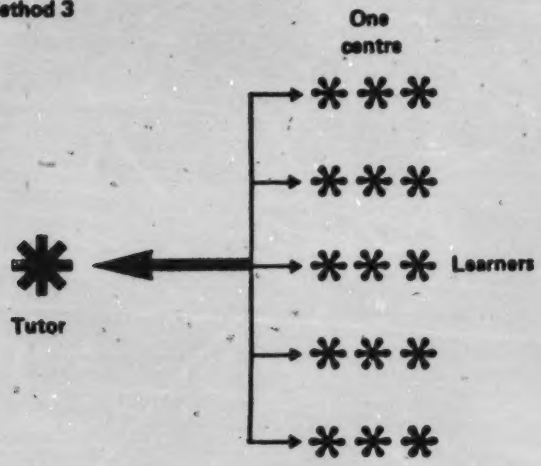
Method 1

(Public lines)

Method 2

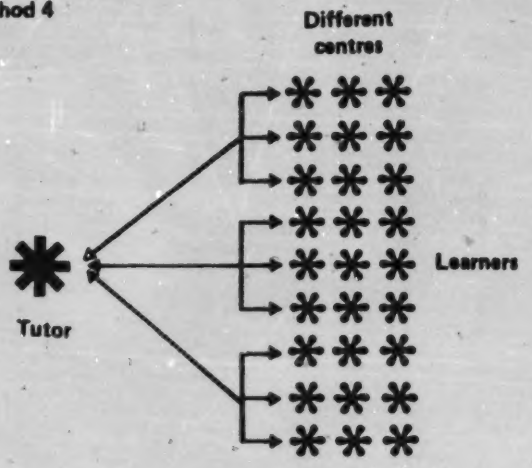
(Public lines)

Method 3



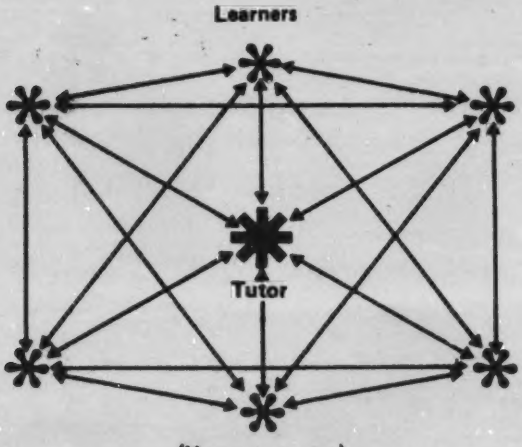
(Loudspeaker telephone)
(Public or dedicated lines)

Method 4



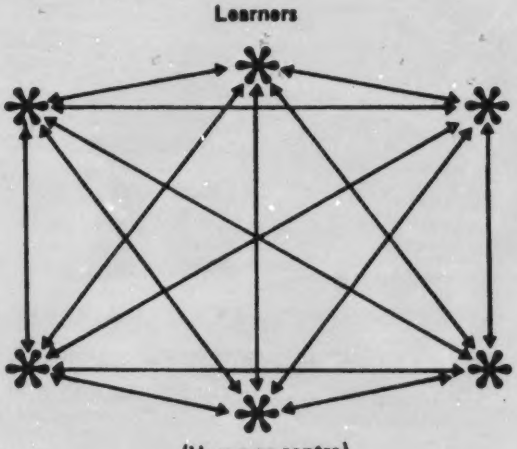
(Loudspeaker telephone)
(Public or dedicated lines)

Method 5



(Home or centre)
(Conference call)

Method 6



(Home or centre)
(Conference call)

Figure 19

In order to give some basis for comparison, I have assumed a 16 week course, and to provide a basis for comparison I have taken the more conventional face-to-face teacher-led study-circle or evening class, assuming one hour's instruction a week, for an average class size of 10. Costs for such classes are worked out in Section 9 and Table 13 below is based on these costs:

Table 13: Costs for teacher-led face-to-face tuition

	500 students 50 tutors	1000 students 100 tutors	5000 students 500 tutors	10000 students 1000 tutors	50000 students 5000 tutors
Over 1 year	88 000	176 000	888 000	1 760 000	8 880 000
Over 4 years	352 000	704 000	3 520 000	7 040 000	35 200 000

With this as a base for comparison, various methods of telephone teaching can now be examined.

Method 1: Tutor - Learner. When it is not possible to provide group teaching, either because of a shortage of teachers in an area, or because there are insufficient students in an area to make it worthwhile, learners could be allocated to telephone tutors. (The tutor could either be at home, if he has a telephone, or be available at certain times at a school or education centre). Learners could either pay for the calls themselves, or be allowed to make a certain number of "free" calls as part of the course. This method of tuition has been used successfully in two separate experiments in Sweden, at the University of Lund (Flinck)[27], and the University of Linköping (Davies)[28]

If a situation in Norway is considered where students live too far away from each other to attend group meetings regularly, they may be allocated a telephone tutor. There are several ways in which this might be organised. One would be for each student to be entitled to 10 minutes personal, individual

telephone contact with the tutor. At the University of Wisconsin, students were able to make a certain number of "free" calls to their tutor, but tended not to use this service, especially in the early part of the course, when problems are greatest. It may therefore be best for tutors to call up each student at a regular time each week. If a tutor called each of 10 students once a week, the minimum time required to speak to them all for 10 minutes each would be 100 minutes. Allowing for delays and preparation for each call, it could be assumed that the tutor would require 120 minutes a week for this activity. Tuition costs are on the same basis as in Section 9, but for two hours each week, in Table 14, and cover a course lasting four years.

Table 14: Costs of individual student/tutor telephone contact

	500 students	1000 students	5000 students	10000 students	50000 students
Tutor costs	704 000	1 408 000	7 040 000	14 080 000	-
Telephone costs: >50k.	493 120	986 240	4 931 200	9 862 400	-
<50k.	278 720	557 440	2 787 200	5 574 400	-
Total: >50 km.	1 197 120	2 394 240	11971 200	23942 400	-
<50 km.	982 720	1 965 440	9827 200	19654 400	
Face-to-face	352 000	704 000	3520 000	7040 000	-

It can be seen that telephone teaching along this model is about three times as expensive as providing face-to-face tuition. However, a number of factors have to be remembered. The practical alternative to telephone teaching in this situation is not face-to-face tuition, but no tuition at all, for distances of more than 50 km. For distances less than 50 km., (but further than the next kommune), students will in most cases require a car, or will need to depend on buses or trains. Thus their costs should be added to the face-to-face costs. For instance, if each student used 20 kr. in petrol and wear and tear to the car each time he or she travelled to a class, there would be no difference in face-to-face and telephone costs, even for distances greater than 50 kms. Also, in

this model, students are getting 10 minutes individual attention each week, and tutors are spending 60 minutes more a week in contact activities in the telephone method. Costs for 50000 students for telephone teaching are probably not practical, as such courses would almost certainly have local classes available with that number of students.

Method 2: Learner + Learner (Self-help). Again, where it is difficult to arrange for learners to meet in groups, learners may wish to telephone each other, to discuss difficulties or problems. (This might be useful, for instance, for para-medical training, where only one or two people in a locality are involved). The only organisation required is a knowledge of telephone numbers where other learners can be contacted, and a set time when learners would be available (in some cases, institutional phones could be used).

This system, of course, need not cost the organising institution anything. It is particularly useful if there are just two or three students in an area of 50 to 100 kms. from any centre. Even so, such contact for the student could be expensive. One 10-minute call a week for 16 weeks in a "less than 50 km." range would cost each student 140 kr. (although this cost could be shared if two students took it in turns to ring each other). It is up to the organisation though to give the students the numbers of other students in the area, and to introduce them, preferably in an initial contact on a group basis at the beginning of the course - at a weekend session or school, for instance.

Method 3: Tutors - Learners in a Group. Where there are shortages of tutors, and where tutors would have to travel long distances or have difficulty in reaching a centre, a tutor could be linked by telephone to a class, by means of a loud-speaker telephone in the local study centre. Loudspeaker telephones are available commercially, and cost between 2000-4000kr. Students could communicate back to the tutor, by means of a microphone linked to the study-centre telephone. A tutor could cover several groups consecutively in this way in one evening, without having to travel.

This would be used in a rather different situation than in Method 1. This is where there are enough students in an area for a group, or self-help study circle, but no local teacher or specialists can be found. This might be useful for instance for subjects where there is a national shortage of qualified teachers - such as in computing or in mathematics. The tutor could either be used on a regular, weekly basis, or different specialists or even visiting specialists from abroad could be recruited on an occasional basis. Again, much would depend on the organisation responsible for the course. This would have to set up classrooms with loudspeaking telephones and microphones, and find ways of communicating with the various study circles. Because of the variety of ways in which such a scheme could be operated, it is not feasible to calculate costs outside the context of an actual project.

Method 4: Tutors - Learners in Several Groups. This system is operated by the extension programme at the University of Wisconsin, U.S.A. The central campus at Madison has direct, dedicated lines (i.e. only for University use) with over 20 centres around the state. Each centre has several rooms, each with a loudspeaker, and a set of microphones for use by students. A tutor can in this way lecture up to 200 classes, or over 4000 students, at once, and students can also communicate with the tutor, although obviously such a system is not highly interactive. (University of Wisconsin [29])

This is really a University extension system. Because it needs no local tutors, it is very cheap to run, but provides little in the way of two-way contact, and one wonders why the lectures are not distributed in print or by cassette. It also requires a considerable amount of capital investment in loudspeakers, microphones and a network of lines dedicated only to the education system. It is difficult to see how such a system would fit into the social and organisational framework of adult education in Norway, so no costs have been estimated for this system.

Methods 5 and 6: Conference call - with or without tutor. Using the special exchange and the help of the operator, it is now possible in Norway to link up to nine different numbers simultaneously, so everyone can speak to and hear everyone else. In this way, a seminar can be arranged without students having to leave their houses, or alternatively, nine centres could be linked together. This system is now being used extensively at the Open University in place of face-to-face tuition, particularly for courses with low enrollment numbers (i.e. less than 500 - Turock[30]).

The main disadvantage of the first method described is that it does not allow for interaction between students, or for learning through discussion. In other words, the social side of learning is missing. Conference call does at least allow for interaction, and for learning through discussion, enabling students to play a more active role in their studies. It is though, given the present system of costing in Norway, very expensive, as can be seen from Table 15. First of all, it costs 4 kr. per connection - or 36 kr. for nine for one seminar. It then costs, for one hour (about the maximum time one can conveniently talk on the telephone without physical fatigue), 6,05 kr. x 20 x 9 for nine people = 1089 kr. Altogether, then, for one one-hour seminar, the total cost would be 1125 kr. (This is 11 times the cost of the most expensive conference call facility in Britain, where charges vary according to distance). Since eight students plus a tutor is the maximum number, unless loud-speaking telephones are used, groups have been calculated on a ratio of 8 students to 1 tutor. This is the basis for Table 15 (a course of 50000 is omitted - see above):

Table 15: Cost of telepone seminars in Norway.

Costs for ONE year	500 students	1000 students	5000 Students	10000 students
	63 groups	125 groups	625 groups	1250 groups
Without tutor (8 stds)	1008000	2000000	10000000	20000000
Tutor costs (100 kr/hr)	100800	200000	1000000	2000000
Tutor phone costs	126000	250000	1250000	2500000
Costs with tutor (total)	1234800	2450000	12250000	24500000
Face-to-face (8stds.)	110880	221760	1108800	-

With costs for conference call seminars running at 10 times the cost of face-to-face tutorials, it is clearly an uneconomic system, given present methods of costing.

ADMINISTRATIVE USE OF THE TELEPHONE

As well as possible educational uses, the telephone will be an important instrument for the administration of distance education projects. For instance, the board of NFU come from Stavanger, Førde, Trondheim, Drammen and Oslo. Using conference call facility, urgent items of business which need formal discussion and decision could be handled in this way. Even though it costs 1000 kr. an hour, this is cheaper than air-fares and hotel bills. The telephone will also have to form an important link between NFU administration and students, and local organisers, if direct contact is to be achieved on any extensive basis.

VIEWDATA AND TELETEXT

Viewdata is a data access, visual display service which is being developed by the British Post Office. The Viewdata receiver is a modified television set, capable of receiving normal television programmes, Ceefax (BBC) and Oracle (IBA) broadcast information services, and Viewdata as well. The modification to the domestic television set allows the set to display text and graphical information transmitted via the public network. The user's telephone is connected to the television set by Post Office engineers.

A small keyboard is used to select a required page (960 characters per page) of information. By pressing a single push button, one of 10 display choices can be selected, a second operation selects one of 10 sub-sets, and so on. Thus six consecutive push-button operations, taking less than half a minute, enable one of a million pages of information to be selected. The user can be guided through the material on the displayed pages. He can search backwards or forwards through the sequence of pages by means of the simple keyboard. By adding an alpha-numeric keyboard it becomes possible to use Viewdata to provide a fully automatic message service, messages being stored at the exchange until the recipient is ready to receive, and then displayed on the television receiver screen. The information available for display on

Figure 20: Viewdata schematic
(from Bates and Kern[23])

Viewdata can be changed by the information providers as frequently and as rapidly as is necessary. Additional data banks can be added as demanded.

Since the user can generate his own information for retrieval by others, it would be possible for any campus-based educational institution with access to computing facilities or expertise to provide home-based learners, either locally or nationally, with a direct literature retrieval service, multiple-choice type questions or even examinations, programmed learning, or even a computing service. Production of this software though would require input from teaching staff, library staff and computing staff in the local institution. The materials could be produced simultaneously as a teacher types out information on the alpha-numeric key-board, or the material could be produced and perhaps tested prior to the intended use by students. Home-based learners could have access to just the material generated locally by the nearest campus-based institution, or could have access to a wider range of material provided by other institutions.

The British Post Office plan to offer Viewdata as a full public service in 1980. Adapted television sets can be purchased in Britain now, but because of the small production level, their cost is high (about £1000). However, a separate Viewdata adaptor, which can be plugged into a standard television set through the RF aerial, is being manufactured at a unit cost of £100. By the mid-1980's, it is likely that Viewdata adapted sets will be the norm rather than the exception in Britain, and that by then, user costs, if the service proves successful, will be low - for the user, the normal rate for a telephone call; for the supplier of information, a special rate for accessing and storing of his information.

Televerket currently has a Viewdata output terminal in Norway, as an experiment. It has no alpha-numeric keyboard or arrangement for input of Norwegian information (as Holland has for Dutch information).

Viewdata appears to have a strong potential for both home-based learners, and for campus-based institutions. It allows for the production of locally originated teaching materials, under the control of the local teacher or a central

institution, and would allow students to access information in their own homes. There is an element of interaction, and the system would allow students to master certain areas of knowledge through practice, structured teaching materials, and computer controlled exercises. At the same time, students could have access to materials already generated by other institutions. If the Viewdata adaptor becomes standard in television sets, the service could eventually be available to all homes in Norway. However, it will not be available on a national basis for at least five to ten years. Costs have still to be established, both for the equipment itself, and for user charges. The system, if it is to be used for teaching, will need to generate vast quantities of "software", which will require much time from teachers. Perhaps most important of all, the system depends on the general public wanting it as a home information, domestic ordering and booking service.

Ceefax has been developed by the BBC, and Oracle by the IBA. The general term Teletext is now used to describe these two systems. Basically, textual information is transmitted in the spare capacity available in the broadcast television waveform. This information is then reconstructed in the same manner as Viewdata with 960 characters per page in seven colours. However, unlike Viewdata, which theoretically has an unlimited information capacity, Teletext is limited to 800 pages of text. In addition the information on Teletext is determined by the supplier of the service, while with Viewdata, the Post Office would act as a common carrier. At the moment, Teletext is being used for up-to-the minute news reports, weather information, stock market reports, etc. It is therefore much more like an additional news source, and its teaching potential is rather limited.

TELEVERKET AND DISTANCE EDUCATION

Televerket is very willing to co-operate as much as it can with NFU and any other organisation interested in using the telephone for teaching purposes. However, Televerket can act only as a common carrier. The teaching would have to be organised by user organisations, although there are strong possibilities that Televerket could help with research and development projects for the use of the telephone in

distance teaching.

It is difficult for Televerket to offer special rates for education. Televerket has no special rate system for heavy users or for disdavantaged groups. It would prefer to keep its basic rates, and for education to seek subsidy through organisations such as NFU.

COMMENTS AND CONCLUSIONS

1. The educational advantages of telephone teaching.

Telephone teaching is the only technological medium available at the moment which allows for immediate interaction between students and teacher, or between different students. It provides important pedagogic benefits generally lacking in other forms of distance education:

a. Individual attention. The tutor can deal with a problem particular to an individual student. By using the telephone, other learners are not kept waiting while other people's problems are being dealt with.

b. Diagnosis. By talking to or questioning a student, a skilled tutor can identify learners' problems. Learners often do not know why they are having difficulties, or even that they are getting off-track or making mistakes. It is often difficult even for adult learners always to articulate their problems. A telephone conversation with a tutor can help resolve such difficulties on the spot.

c. Decentralisation of teaching. By the use of tutors, while not based locally, at least away from Oslo, the imposition of a centralised, standardised approach can be avoided. A student's telephone teacher could also be changed several times, if thought desirable, so that students are not subjected to one set of ideas all the time.

d. Reduction of isolation. Even though a student in

practice may not make much use of a telephone tutor, the sense of isolation is reduced if he knows there is someone he can ring if he really has problems. Telephone contacts with other learners can also be helpful in reducing isolation, either through one student helping another over difficulties, or through realising that other students are having the same problems.

2. Disadvantages and difficulties.

The two main problems are access and costs.

a. Access. It will be important to find out exactly what kind of people do not have their own telephone. It may well be that it is the very kind of people that NFU is trying to reach. Although 12% have access to a telephone, in addition to the 57% who have a telephone in their own home, this 12% may find it very difficult to get access for telephone teaching purposes. Access through work or friends and neighbours is not a satisfactory base for distance learning. The situation on the other hand may not be so difficult as it seems. The figures were collected in 1973, and coverage may have improved since then. Televerket is planning its own study in 1979. Nevertheless, it will remain important for the first NFU project teams to make a special effort to find out what kind of people do or do not have telephones, for future planning purposes.

The possibility of using telephones in local schools or libraries for distance teaching purposes might also be explored. Telephones tend to be seen as the private property of administrators, but they are not used in schools during the evenings, and this may be a useful support service for students without their own telephones.

b. Costs. It can be seen that the cost of Method 1 - individual contact between tutor and student - is expensive, but could still be justified. On the other hand, telephone seminars do not appear to be viable economically, given

Televerket's method of charging.

NFU might want to take up a number of issues related to telephone tariffs in Norway. Firstly, there would be cost as well as educational benefits in trying to locate telephone tutors at least in the same fylke as students. If telephone tutors are to double also as correspondence tutors - as they should - this has important implications for recruitment.

NFU might also want to see whether the cheap rate available in local areas from 17.00 onwards could also be made available from that time for longer distance calls - or at least those using an automatic dialling system. While telephone tutorials after 20.00 would still be perfectly feasible, there are also advantages in following a broadcast - which will most likely be earlier in the evening - by a telephone tutorial while the programme is still fresh in the students' minds. This way, both the broadcast and the telephone tutorial would be maximised. However, with the main rate operating up to 20.00 hours for longer distance calls, this could not be justified economically.

NFU might also press Televerket to reconsider its tariffs for conferencing. At the moment, it is just pricing itself out of the education market. It would not be necessary to ask for a special educational rate, but to ask that the same principles that apply to other calls should also apply to telephone conferencing. The main users at the moment are businesses, who need to use it during peak times. Furthermore while there is only one manually operated exchange in Oslo, the cost has to cover calls from anywhere in the country. With the purchase of five new exchanges, deposited in different areas,(and particularly if they are automatic), there are grounds for considering a more flexible basis for charging. Thus there might be a cheap rate, showing the same level of reductions as the other services, for week-ends and evenings. This in itself would give a 25% reduction. Televerket might also be persuaded to consider a Rikstakst 1 rate as well, at

least on a regional basis around the six exchanges. This would give a massive 40% additional reduction. Thus, teleconferancing costs could easily be halved or cut even by two-thirds for educational use, merely by applying principles which apply to ordinary calls.

There is also much "commercial" sense in this, as far as Televerket is concerned. At the moment, it has half its system underused in the evenings and at weekends. A dramatic reduction in costs for teleconferencing would bring in a dramatic increase in revenue, at no extra cost. With the present costing system, though, there is no way that the use of teleconferencing for educational purposes could be justified economically.

3. Research and development.

Telephone teaching is a very much undeveloped field, not just in Norway. Because on the one hand it could lead to considerable educational advantages to individual distance education students, and at the same time be very expensive - or on the positive side generate a considerable increase in revenue for Televerket - there is much to be said for a number of joint experiments between NFU and Televerket. There is no need for massive capital outlay or the purchase of equipment which may never be used again. What is needed is information about how to organise the system, what students feel about it, and reasonable methods of costing and charging. There is no doubt though that telephone teaching appears to have immediate potential for distance education in Norway.

REFERENCES

26. HAVOLD, J.I. Hvordan kan Televerket betjene en fremtidig norsk fjernundervisning? Oslo: konferanse om telekommunikasjon i fjernundervisning, 1978.

27. FLINCK, The telephone used in an experiment of distance education at the University of Lund. Lund:University of Lund, 1976.

28. DAVIES, N.F. The use of the telephone in distance teaching. Linköping: Department of English, University of Linköping, 1976.

29. UNIVERSITY OF WISCONSIN. The telephone in education. Madison: University of Wisconsin extension conference proceedings, 1976

30. TUROCK, B. Telephony: a passing lunacy or a genuine innovation? Teaching at a Distance. No.8, 1977.

23. BATES, A.W. and KERN, L. Alternative media technologies for the Open University. Milton Keynes: Open University, 1977.

SECTION 7

CORRESPONDENCE EDUCATION

7. CORRESPONDENCE EDUCATION

GENERAL

There are 34 correspondence schools officially recognised by the State Brevskolerâd. In 1977, there were 217 000 enrolments in correspondence courses on an individual basis, and another 34 000 enrolments in 5000 study circles for correspondence students. For individual students, the completion rate was 41%, and for study-circles 15%.[31] There were 1200 different courses on offer, and the State will provide 40 million kroner towards the cost of correspondence education in 1978.

Given this extensive range of courses and provisions, I have not attempted to provide a full survey of correspondence education in Norway, but have aimed at concentrating on those aspects of particular relevance to NFU. Consequently, I visited three of the largest correspondence schools, and the information is based primarily on these sources.

RANGE AND SIZE OF COURSES

An examination of the courses offered by three of the main correspondence schools will give some idea of the range and size.

Norsk Korrespondanseskole (NKS) has 80000 active students. It has about 350 courses on offer. The courses are divided into four broad categories, and preliminary percentages of course enrollments between these categories for 1978 is as follows:

General studies (allmenfag):	43%
Commercial studies:	30%
Technical studies:	10%
Social and leisure studies:	17%

10 000 students are following commercial studies course, and 2 000 students are taking courses leading to the University entrance qualification (examen artium). About 450 teachers are employed by the school.

Folkets Brevskole has 13 000 independent students, and 11 000 students enrolled through organisations. It has about 150 courses on offer. About half the courses are for use within the 61 organisations - Trades Unions, A.O.F., temperance societies, etc. - which are formally linked to and support Folkets Brevskole. The other coursres are in commercial studies, general studies (allmenfag), social and leisure activities, and some multi-media language courses.

NKI-skolen has about 7 000 student enrolments, of which about 2 500 are following larger course combinations, usually leading to some form of engineering qualification. There are about 250 separate courses or course elements on offer, almost all in technical subjects, or subjects linked to engineering.

The term "course" is not very meaningful, as it can cover anything from a short, 3-4 week separate but related element of a combination of parts leading to one qualification, to a two-year, single course leading to qualification. To get a better idea of courses and course size, an analysis was carried out of enrollments in 1977/78 for courses in Folkets Brevskole. This is summarised in Table 19:

Table 19: Course enrollments for one correspondence school, 1977/1978

No. of courses with more than 1000 active students:	17 (11%)
Number of courses with between 100 and 1000 active students:	75 (49%)
No. of courses with less than 100 active students:	62 (40%)
No. of courses with more than 10000 enrollments since beginning of course (current courses):	18 (12%)
Size of largest course, 1977/78	2633

The most popular courses were language courses, in this particular school. It does indicate however the comparatively small numbers of students following individual courses, in one of the largest correspondence schools.

Types of correspondence course. There are three ways to follow correspondence courses in Norway. One is as an individual pupil, studying solely at home. The second is combining correspondence teaching with class instruction (kombinert courses). Such classes meet once or twice a week. The leader may or may not be a qualified teacher, depending on the organisation. The third method is by correspondence study circle (brevringer). The correspondence schools provide study materials for the circles, which, once set up, more or less organise their own activities. The circle will submit a joint assignment for comment or marking by a correspondence tutor. Folkets Brevskole for instance has 1 700 such study circles, and several courses prepared for study circles have over 2 000 participants.

Multi-media courses. The first multi-media courses were linked to broadcasts bought by NRK from the BBC and adapted for Norway (such as "Slim John"). For these early courses, the publishing company Gyldendal had the rights for the printed materials, and Folkets Brevskole provided the correspondence units and tuition. More recently, courses such as "Start", and other courses co-ordinated through Mediautvalget for voksenopplæring, have been organised in a different way. The correspondence schools have designed and published the printed materials, including the course books, as well as providing correspondence tuition and general course advice. Samnemnda, the umbrella organisation for the voluntary adult education organisations such as A.O.F and Folkeuniversitet, have organised face-to-face classes. NRK have made the broadcasts. Mediautvalget for voksenopplæring is a committee with two representatives from Samnemnda, two representatives from Norske Brevskoleforbund, (the correspondence schools' umbrella organisation) and two from NRK. So far, Mediautvalget for voksenopplæring has co-ordinated the design of "Start" English language courses, with NKS and Folkets Brevskole being joint co-operating institutions from the correspondence school sector, a course on gardening, and "Det Store Samspillet", an ecology course, where NKI-skolen has been the participating correspondence

Folkets Brevskole and NKS will again work together as the correspondence sector participants for the next Mediautvalget course, "Por Favor". Other multi-media courses, combining a correspondence and print element, and/or face-to-cace tuition, together with broadcasts, are "Norsk på ny","EDB og samfunnet", "Moderne matematikk", "NOVU", "Norge blir til", "Barnet i utvikling", "Les og lær", and "Lytt med øyene". These courses were not organised through Mediautvalget, although most involved discussions and meetings between correspondence schools and NRK.

As well as multi-media courses where the audio-visual media is broadcasting, there are several courses with non-broadcast audio or audio-visual components, using audio-cassettes and/or film-strips. For instance Folkets Brevskole and NKS have produced a course on "Bedre arbeidsmiljø", distributed through Trades Unions, employers and other organisations, which includes film-strip and audio cassettes. More than 90 000 copies have been sold or distributed over the last three years. NKI-skolen also has an audio-visual course, combining audio-cassettes, an illustrated work-book, and a fact book, on data processing.

Multi-media courses, particularly those with a broad-casting component, tend to attract much larger course enrolments with the correspondence schools than the more straightforward correspondence courses. The most successful course, both in enrolments and in successful completion of the course and progress to higher levels, has been "Start". "Start 1" for instance has sold 70 000 copies of the course text, and has been followed by more than 17 000 in study circles. The drop-out after one term is only 2.2%.

All multi-media learning materials developed so far in Norway are self-sufficient, in that students can follow the broadcasts, for instance, without watching the broadcasts, or can watch the broadcasts without following a correspondence course, buying the book or enrolling with a class or study circle. Mediautvalget is a forum, where those from

different sectors (broadcasting, correspondence schools and voluntary organisations) who wish to co-ordinate their activities meet, and discuss their plans, and agree amongst themselves on future, co-ordinated courses. The various components of these courses, though, are designed independently, in that there is no direct links between individual chapters and programmes, etc.

The books for multi-media courses produced under the umbrella of Mediautvalget can be bought directly from bookshops, since the correspondence schools distribute the books to bookshops through their own publishing departments. Alternatively, all materials can be ordered from one central project address

COURSE DESIGN AND PRODUCTION

A proposal to mount a correspondence course may come from several sources. One correspondence school explained that a proposal may come from the staff of the school, anticipating a need, and using surpluses from previously successful courses to finance the development of a new course (hoping the course will do well enough to pay for this development and thus create resources for a new course, and so on); or the school's Board of Studies, which has membership drawn from a variety of voluntary organisations, may suggest a course; or one of the school's supporting organisations may individually suggest the need for a course, in which case the organisation may help cover the cost of the course. All course proposals, though, wherever they originate from, must be approved by the Board of Studies in that particular school.

One of the schools has three to four full-time editors and a system of part-time editors, under the leadership or guidance of the full-time editors. (Another of the schools has two to three full-time editors.) If the editors are not sure of the economic viability of a project, they will seek financial support from the supporting organisations.

Writers of correspondence courses are either recruited by the full-time editors, or suggested by the supporting organisations. Finding good correspondence education writers was reported to be quite difficult, and editors often had to spend much of their time in guiding writers as to the special requirements of correspondence courses. In all three schools, editors appeared to have strong pedagogic principles which guided the design of correspondence materials, incorporating activities, exercises, careful lay-out, and plenty of illustration. Courses are varied in their pedagogic approach, from "learner-centred education, extensive use of learning by discovery, aiming at learner freedom and autonomy, reducing the co-operating organisations ... to helping organisations", to "teacher-centred education, where the media are used as substitutes for the teacher, telling the students what he ought to know."[32] Examples of both styles of course design are evident, the choice of approach depending on the need for formal qualifications or not at the end of the studies, and the extent to which courses were written at the request of supporting organisations. There is also awareness of the possible range of correspondence course along the individual/social dimension, as can be seen by the combination of methods available, using study circles or "kombinert" courses, as well as individualised learning.

Writers are normally employed on a part-time basis, doing the writing in addition to their normal work (which need not necessarily be teaching). Some of the supporting organisations, like A.O.F., have their own full-time educational staff, who may write materials as well. Occasionally, where appropriate, teachers are seconded full-time for six months. Payment for part-time writers is roughly at the rate of 3 000 kr. for 24 printed pages (A5 size) or 50 kr. per page for translations. The bigger correspondence schools have their own graphics designers and lay-out specialists, although independent printers are used. Several correspondence schools in fact have their own publishing departments, which print books as well as correspondence-linked materials.

TUTORING

All three of the large schools visited recruited correspondence tutors almost entirely from the Oslo area. They are normally recruited through contacts made by the editors, or are suggested by the supporting organisations that propose courses. There is generally no difficulty in getting tutors, except for very specialised courses. Quite apart from the influence of local contacts between editors and potential tutors, one reason given by one school for the use of tutors from just the Oslo area was that this enabled assignments to be marked and returned more quickly, tutors in person collecting and returning assignments to the schools' head office. On the other hand, several people said that the correspondence schools would like to decentralise more.

. Correspondence tutors tend to have up to 150 students each on any one course, although for more advanced, technical courses, the ratio would be somewhat less. Payment varies according to the level of the course, but is normally between 7 kr. and 35 kr. an assignment, although for an average course, below University level, 15 kr. an assignment would be a normal payment. At least in the larger schools, tutors are expected to be more than just markers. For instance, some schools instruct their tutors to develop a close direct contact with students, to exchange autobiographical details, and send a photograph of themselves. In some schools, students are followed every month, if they do not submit an assignment. They receive a reminder post-card, with a further reminder if still no reply has been received. After three months, a letter is sent, which includes questions about the problems the students may be having. In one school, attempts are made after this stage to contact the student personally through one of the correspondence school's full-time counselllors, but there are not always sufficient resources to enable this to be done.

Most correspondence schools would like to appoint the same person as a correspondence tutor as well as a group

leader for "kombinert" classes. They would like to develop the correspondence teaching as the main component, with a heavy emphasis on individual learning, with face-to-face group teaching as an important but subsidiary activity. The correspondence schools would like to appoint the study circle or class leaders, but have them employed by the voluntary organisations or skoleverket. However, the State governing body for correspondence education, Brevskolerådet, will not, for State funding reasons, allow the same person to be employed as both a correspondence tutor and class tutor for the same students on the same course. Therefore, under current practice, the correspondence schools recruit the correspondence tutors, and the voluntary organisations recruit the face-to-face tutors.

One school pays tutors by assignment, but to encourage tutors to keep students studying, pays a bonus of 50% for each student who completes the course. There are some people in the correspondence schools who would like to see tutors paid a flat, hourly rate, for each student, which would cover not only correction and commenting on assignments, but would also include counselling. However, at the moment, tutors seldom spend more than half an hour on individual assignments, nor could they be expected to, at a rate of 15 kr. per assignment.

All three schools have produced tutor training packages for their correspondence tutors. Some schools try to ensure that tutors are interviewed by editors before they begin, so that they know what is expected of them. They are in any case usually encouraged to keep in touch with course editors. Sometimes, assignments are photocopied and sent to several tutors for marking, then the marking is discussed with the tutors. At least one school evaluates all tutors through their marking and comments each year, and has one full-time person responsible for tutor training.

REGISTRATION AND DISTRIBUTION

Two of the three correspondence schools visited have

computerised registration schemes, which differentiate between individual students (enrolled perhaps for more than one course) and enrollments for individual courses. Some schools have or are developing programmes which provide an on-going analysis of student progress, drop-out,etc., and records include background data on sex, previous education and age, etc. The computer also controls the printing of labels for distribution of materials and the return of assignments.

Two of the schools also have facilities for computer-marking of assignments, using multiple choice questions, but usually in conjunction with tutor-marking as well. One school has a programme which checks the reliability and effectiveness of the computer-marked questions, and provides individual letters with pre-coded comments on the students' performance. The school handled 20 000 assignments in this way last year.

WORKING WITH NFU

For the last two years, Norsk Brevskoleforbund, the association of Norwegian correspondence schools, has informed member schools of developments in possible multi-media courses, as a result of notification from Mediautvalget. Those schools who are interested in participating then come to some kind of agreement about who will or will not take part. The choice of correspondence school is influenced by the previous experience and knowledge of the subject-matter in question. For instance, because NKI-skolen had previously run courses in ecology and the environment, it was, in the words of one person interviewed, "natural" that it should be the correspondence school participating in "Det Store Samspillet". NKS and Folkets Brevskole have both worked together on multi-media courses. However, last year a third correspondence school - a smaller one - wanted to be involved with the new language course, "Por Favor", in order to gain experience in multi-media production. NKS and Folkets Brevskole both objected, arguing that they would have to do all the development work - as they had the experience -

and the other school would get a free ride, and the benefits of association with a broadcast component, with the resulting publicity and increase in numbers of enrolments. Norsk Brevskoleforbund was unable to resolve the conflict, and NRK was asked to decide. Although it ruled against inclusion of the third school, NRK does not want to be put in that position again.

One of the large correspondence schools thought it would, for these reasons, be inappropriate for Norsk brevskoleforbund to decide on behalf of NFU which correspondence schools should be involved with NFU projects. They would prefer to see NFU specify the course, in terms of subject area, target groups, likely numbers, services required, and then the correspondence schools should then be allowed to bid for the course, in the same way that private companies bid for State contracts in other sectors. It was not possible for Norsk brevskoleforbund to make that kind of decision, it was claimed. To do so, there would need to be a change in its terms of reference, but even then, it was not thought to be the best body to do this. It would have to be "fair" to all its members, which could mean that some schools might be suggested who were not really appropriate, just because it was their turn.

There was no objection from the bigger schools to two correspondence schools working together on the same NFU course - there could be advantages to NFU, it was claimed, since different schools tended to appeal to different types of participant - but there would be strong objections to several schools being involved, for reasons given earlier. One school thought that it was important for Norsk brevskole forbund to nominate one representative to the NFU pre-project group, as it was essential that someone with experience could determine costs, services available, etc., but that the pre-project group as a whole should recommend which correspondence school or schools should be chosen.

One school said that it would prefer to work with NFU on a contract basis, offering specified services for a specific number of students. It did not want an arrangement whereby it had to bear the risk of not knowing how many students there would be enrolled, when it had no overall control over the project, in terms of advertising, recruitment, etc. One representative of a correspondence school saw problems in the overlap between mediautvalget for voksenopplæring and NFU. It was recognised that NFU would eventually have to take over the role of mediautvalget, but he wanted the experience developed by mediautvalget to be used in the interim period, and taken into account more by NFU when it was operational.

COMMENTS AND CONCLUSIONS

1. Range and size of courses.

There are very many correspondence courses on offer - so many, in fact, that it might be worth NFU pressing for or commissioning a study of exactly what exists at the moment, how many students there are on each course, and what the drop-out rates are, in order to find out what the gaps are (if any), where there seems to be already a satisfactory provision (foreign language provision, for example), and where there are existing courses which might need revising and enriching through other media. Current information across the whole of correspondence education is not publicly available. It is planned to include statistics of correspondence education in future adult education statistics, but the information contained in Brevskolerådet's annual report is very sparse. NFU will need detailed information on correspondence courses, if it is to avoid duplication and to set priorities.

2. Choice of correspondence schools for NFU

This is obviously going to be a major problem for NFU,

and again one that can only be resolved by extensive discussions between NFU, Norsk brevskoleforbund, and the individual schools. NFU also presumably will need to decide whether it favours the principle of "fairness" - of supporting the small as well as the strong - or whether it will deliberately choose the "best" school for each project, which in the long run is likely to favour the schools with the most resources. It will also have to lay down criteria for what it thinks is best, unless Norsk brevskoleforbund is prepared and able to make the choice or advise NFU itself. Again, these are policy decisions, which cannot be resolved or guided by research.

3. Production and tutoring.

The quality of the texts is evidence of the experience and professional background of those responsible for course design, at least in the larger schools. This experience in the design of distance education materials will be crucial for NFU. Editorial staff from some of the correspondence schools could play a major role in the development of NFU courses, both within projects, and in training of NFU staff.

I am not so sure though that the situation is as satisfactory with regard to tuition. Tutors appear to have large numbers of students, and comparatively little time to spend on the marking of individual assignments. They are also distanced from their students, indeed being prevented by the regulations of Brevskoleråd from teaching them face-to-face as well. I think the correspondence schools are aware of these difficulties, and as much is done as possible to train tutors, to broaden their role, etc., within the resources available (although this must to some extent be a matter of internal priorities on how money is spent). For NFU's purposes, there is much to be said for reviewing the role and function of correspondence tutors within NFU projects. There would be strong pedagogic and economic arguments for decentralising recruitment, for

combining where possible face-to-face tuition with correspondence tuition, and giving tutors a greater counselling role, especially through use of the telephone (see Section 6). This would place greater emphasis on flat-rate payments (rather than on payments per assignment), encouraging tutors to use their time for counselling and tutorial roles, rather than overemphasising the marking function. However, this will almost certainly require more money to be spent on correspondence tutorial activities than is spent at the moment. Such an increase in expenditure may be justified in economic terms. Drop-out rates vary according to the type of course and definitions of drop-out[33,34,35,36] Brevskolerådet's annual report[31] suggests an overall drop-out rate of 60%, which is not satisfactory. In fact, drop-out rates are better for Norwegian correspondence courses than in most other countries, partly as a result of the regulations on State support for correspondence education introduced at the beginning of 1977. For instance, NKS's completion rate on the 25 150 courses which qualified for State repayment, was 55%. Nevertheless, given the cost of course development, and the disappointment and possible sense of inadequacy felt by people who drop out, it would seem sensible for NFU to insist on a broader and more active role for correspondence tutors than has been traditional, with a corresponding reduction in the number of students per tutor than at present on most courses, and a consequent increase in the rate of payment.

4. Costs

The basis on which NFU would pay correspondence schools for their services has not yet been established. For recognised courses, the student pays half the cost on enrolment. If 90% of the assignments are completed, the student gets 35% of his original payment back, from the State. The State will also pay 50% of the total costs of the course to a correspondence school for every student who completes 50% of the assignments, and a further 35% for every student who completes 90% of the assignments. The price set for a course covers the cost of development, the cost of tuition, and the overheads of the

correspondence school, plus postage to(but not from) the student.

It is not clear yet though how a NFU course will be paid for. Will NFU cover all the costs of a course from its own budget, or will the students pay at least a percentage? Will the correspondence component be costed separately? Will NFU pay correspondence schools directly from its budget for services, or will correspondence schools claim back from KUD according to the present method? Until such policy issues are answered, it is very difficult to work out the actual likely cost to NFU for the correspondence side of a multi-media course.

It seems to me unlikely that the current system of payment for correspondence courses will be appropriate for NFU courses. It will be difficult to separate the cost (to the student) of the correspondence element (text and tuition) from the other elements. An alternative system would be for NFU to pay separately to a correspondence school for the development of correspondence texts (if indeed a correspondence school develops the text rather than a publisher) and for the tuition services, plus a certain figure for overheads. The overheads for the development of course texts would obviously be the same for correspondence schools as for publishers (say 125%), but there is no comparable base for overheads for the tuition component. The handling and distribution of correspondence assignments, the recruitment and monitoring of tutors, and, where necessary, the storing of marks and monitoring of students' progress, are not only an essential part of distance education, but also time-consuming, labour-intensive and expensive. Any figure I suggest can be nothing more than speculation. I thought a figure in the order of 125% of the tuition costs might be a starting point. It was pointed out by one school that this would bring costs out lower than existing course fees, and suggested that 200% might be more realistic, without any commitment of course to accepting such a figure for a real project. I have therefore used the figure of 200% of

tuition costs per student as a base for some estimates, because this will enable a comparison to be made between current rates of payment, and a more "de-luxe" tutorial model, with a higher rate of pay.

If then we consider a short, 16 week course, with four assignments per student, at a cost for tuition of 15 kr. per assignment, there would be an additional payment of 30 kroner for overheads. When calculating tuition costs, one must also take into consideration drop-out rates, if the current system is to be continued, since tutors are paid just for those assignments that they mark. I have therefore assumed the following "drop-out" rates: 15% submit no assignments; 65% submit two assignments; 45% submit three assignments; 33% complete the course. This is based on a more traditional kind of correspondence course.[35] (I will calculate costs on a different basis, assuming a more optimistic continuation rate and a different system of payments to tutors, below.) I have assumed full payment of postal costs, at 2 kr. an assignment, with four separate mailings. (Student to correspondence school; correspondence school to tutor; tutor to correspondence school; correspondence school to student)[36] I have also assumed the course will last for four years. From these assumptions, I arrive at Table 20 (over).

This system of costing works out at about 121 kr. per enrolled student, which matches reasonably, if the cost of a course book is added, with current course costs, which are around 170 kr. for a standard 16 week, four assignment course.

However, it is to be hoped that NFU courses, as fully-designed, multi-media courses, will do much better than traditional correspondence courses in keeping students working successfully, especially if it is possible to provide a better, alternative tutorial and counselling system. An alternative system for instance might be based on a flat-

Assignment no.	% submitting assignment	No. of marked assignments for yearly enrolments of: 500	1000	5000	10000	50000
1.	85%	425	850	4250	8500	42500
2.	65%	325	650	3250	6500	32500
3.	45%	225	450	2250	4500	22500
4.	33%	165	330	1650	3300	16500
No. of completed assignments:		1140	2280	11400	22800	114000
x 4 years		4560	9120	45600	91200	45600
Tutor payments, kr.:		68400	136800	1368000	1368000	6840000
% overheads		136800	273600	1368000	2736000	13680000
Postage:		36480	72960	364800	729600	3648000
Total kr.:		241680	483360	2414800	4833600	24168000
Cost per student,kr.:		121	121	121	121	121

Table 20: Tuition costs for "traditional" correspondence.

rate payment, whereby a tutor is payed 60 kr. per hour, for two hours tuition, counselling, and "contact" time per student. This would include marking and commenting on assignments, and other informal contacts with the student, by mail or phone. Under an improved tuition system, and with other media also providing a stimulus, we might assume a different drop-out rate: for instance, 10% fail to return the first assignment, 80% complete the second, 70% the third, and 66% the last. The question arises as to whether the tutor on a flat rate payment should not be paid for enrolled students, even when they fail to return assignments, as he would have to spend more time probably trying to keep them in the

system. However, it might be too tempting to tutors to do nothing, and still draw the full payment, so I have assumed that they will only get the flat rate if the student sends in an assignment for that period. The other question that has to be asked is whether the correspondence schools overheads should be at the same rate. After all, although the tutors are being paid more per assignment, this does not involve the correspondence school in any more work (except that generated by fewer dropping out, and that will be covered as a percentage of completed assignments). Since I have suggested a doubling of the tutors' rate, for the same amount of work for the correspondence school, I would suggest an overhead figure of 100% for each completed assignment (ie 30 kr.). Otherwise, the assumptions are the same as for Table 20. In this way, I arrive at Table 21 (over).

From this table, it can be seen the average tuition cost would be 208 kr. per student, compared with 121 kr. on the more traditional basis. However, on the assumptions made, the number of assignments completed is doubled, and none of the other costs involved in course production are increased. Also, on this basis, although the correspondence schools' percentage of the tutorial costs per assignment completed are halved, they would actually collect more in overheads on the alternative system, because of the increased numbers of assignments completed. Overall costs are increased, of course, but, in terms of the total cost of a multi-media system, the actual proportion of increased cost would be small, against the benefits, it is to be hoped, of a doubling of the numbers completing courses.

I have a feeling that even with an overhead of 200% on tuition fees, I may have calculated too low a rate of return for correspondence schools. It may prove necessary to have a flat or fixed overhead cost, irrespective of the number of the number of students, plus a percentage per student. Although

Assignment no.	% submitting assignment	500	1000	5000	10000	50000
1	90%	450	900	4500	9000	45000
2	80%	400	800	4000	8000	40000
3	70%	350	700	3500	7000	35000
4	66%	330	660	3300	6600	33000
No. of completed assignments		1530	3060	15300	30600	153000
x 4 years		6120	12240	61200	122400	612000
Tutor payments: kr.:		183600	367200	1836000	3672000	18360000
100% overheads:		183600	367200	1836000	3672000	18360000
Costage: kr.:		48960	97920	489600	979200	4896000
Total, kr.:		416160	832320	4161160	8323200	41611600
Cost per student		208	208	208	208	208

Table 21: Tuition costs for "alternative" correspondance teaching.

the actual rates agreed will be important in determining the economic viability of a project from the correspondence schools' point of view, these could be negotiated, and amended in the light of experience. What is more important from NFU's point of view is whether or not it wants to develop an alternative method of payment, or whether it will rely on correspondence schools claiming back the money from KUD directly as in the current system.

An alternative, flexible system of payment along the lines suggested would appear to have advantages both for correspondence schools and NFU. It would give NFU a chance to develop more effective ways of using correspondence tuition, and to observe the effect of different systems of charges on drop-out rates. It would give NFU more opportunity

to obtain the kind of tuition service that each individual project needs. This could be particularly important for projects aimed at special target groups, such as handicapped people, where quite new patterns of correspondence tuition might be necessary. It would allow NFU to judge on a project basis where to put the balance of its resources for tuition - between correspondence and face-to-face expenditure, for instance - rather than relying on a fixed rate. It would also provide correspondence schools with a chance to broaden the scope and professionalism of correspondence tuition and counselling.

5. Mediautvalget for voksenopplæring.

- Reactions to Mediautvalget were very mixed. Some people interviewed strongly supported its activities; others were highly critical. I do not wish to make any judgement about whether Mediautvalget is or is not doing a good job, but the arguments about it are of central relevance to NFU.

Those who support Mediautvalget pointed out that it represented virtually all the experience in Norway in the design of multi-media courses in adult education. The courses that it has run have been highly successful, particularly "Start". It provides a flexible design method for multi-media learning materials, with each component self-sufficient, therefore allowing participants themselves to decide which components or combination of components to study. While accepting that it can and should be improved, it has shown that it does work; it has delivered the goods.

Its critics however point out that its status is somewhat suspect. Some organisations felt quite strongly that it did not reflect their interests, and certainly did not represent a cross section of the adult education world. It was criticised as choosing projects would would appeal to large numbers - because of the mass media elements - but

did not meet the most pressing needs of Norwegian society. There are obvious problems in deciding who should participate in the design and running of courses, as the row over "Por Favor" illustrates, and there does not appear to be a suitable procedure for resolving these issues. It was also argued that while there are advantages in flexibility, it was not a satisfactory arrangement when the broadcasts were available some years but not others, and that there would be educational advantages in closer integration of texts and broadcasts.

These are all problems that NFU itself is likely to face. It does have the advantage - or will have, when its Council is appointed - of the status given by a Parliamentary bill, and should be more representative of the adult education world, and can therefore make decisions about priorities for courses and choice of co-operative partners. It will not, though, I assume, wish to negotiate individually with each correspondence school and each voluntary organisation over participation in each project, and it does seem to be a challenge to these organisations to find some way of deciding amongst themselves about participation in NFU projects. Otherwise, they will hardly be in a position to criticise NFU if it makes its own choice of partners.

The question also has to be considered as to whether or not NFU will make Mediautvalget redundant or irrelevant. In theory, there is no reason why NRK, correspondence schools and voluntary organisations should not continue to come together to organise courses which NFU is not interested in supporting and putting their own money into the projects. Whether or not the State would continue to support such courses is clearly a more political issue, but the idea of courses with mass appeal must be attractive to these organisations, whether or not NFU is willing to give them priority.

Conclusions

Whether or not NFU wishes to bring Mediautvalget's activities within its own area of operation, or whether or not Mediautvalget will choose to continue as a parallel

system, it is clear that NFU will need the co-operation of the correspondence schools. Correspondence education will be crucial, if NFU is to reach isolated and educationally deprived students. The correspondence schools have also the major experience in the design and tuition of distance education courses, and the major experience in registering and administering such courses.

REFERENCES

31. BREVSKOLERÅDET. Årsmelding for 1977. Oslo:Brevskolerådet,1978

32. LJOSÅ, E. Course design and media selection - some implications on co-operation between broadcasting, publishing and distance- education organisations. Oslo:NKS, 1977.

33. ELLANN,B.A. and LJOSÅ, E. Mellom oss, nr.8. Oslo:NKS, 1977

34. NESS,T. Handelsskoleeksamen pr. brevkurs. Oslo: Pedagogisk institutt, Universitet i Oslo, 1976

35. REKKEDAL, T. Correspondence studies: recruitment, achievement and discontinuation. Oslo: NKI-skolen, 1972

36. REKKEDAL,T. Innsendingsoppgavene i brevundervisningen. Oslo: NKI-skolen, 1973.

SECTION 8

PUBLISHING AND PRINTING

Note on terminology: in this section, I have made a distinction between Universitetsforlaget, "private publishers" and correspondence schools. The point has been made to me that all these could be considered private publishers. However, I do need to distinguish between Universitetsforlaget, publishers who are members of Den norske Forleggerforening, and correspondence schools which have also a publishing section. I have used the term "private publishers" to refer specifically in this report to publishers who are not formally linked to correspondence schools, but who are members of Den norske Forleggerforening. This does not imply any comment on the particular status of Universitets-forlaget or correspondence schools as publishers.

8. PUBLISHING AND PRINTING

GENERAL

Parliament proposed that Universitetsforlaget (which has been a main publisher of higher level educational books and research, and also publishes other educational books) should be a co-operative partner with Norsk fjernundervisning.[4] Parliament recognised that it was important for NFU to have an agreement with Universitsforlaget, to ensure that NFU would have a safeguard that publishing requirements would be met. At the same time, Parliament stressed that the agreement with Universitetsforlaget should not prevent, formally nor in practice, other competent Norwegian publishers from having the opportunity to participate on an equal basis in the development of distance teaching materials for Norsk fjernundervisning.[4]

Thus the actual agreement proposed by the Interimsstyret of NFU with Universitetsforlaget suggests that Universitetsforlaget should commit itself to providing advice for NFU on technical, editing and economic issues with respect to publishing and printing; should undertake to prepare, publish and distribute materials when required to do so by NFU; but that the agreement between NFU and Universitetsforlaget should in no way prevent other publishers from advising or publishing on behalf of NFU.[5] This agreement has not yet been ratified by Universitetsforlaget and NFU, at the time of writing this report.

This is clearly a very sensitive area. This study is concerned with the choice of suitable publishers only so far as the need to choose affects the way materials and projects are actually designed - in other words, how the mechanism of choice affects the design of projects. I have then visited not only Universitetsforlaget, but also a private publisher, and a correspondence school which also publishes educational materials. At the same time, both Parliament and the Interimsstyret name only Universitetsforlaget specifically, so I believed it necessary to pay particular attention to the services that Universitetsforlaget can offer to NFU.

PRODUCTION

Universitetsforlaget produces about 400 new titles (including reprints and revised versions) each year. With current staffing levels, it may be possible to add another 50 titles a year. The burden of any extra work resulting from co-operation with NFU would fall mainly on the editors. Although Universitetsforlaget has a dozen or so permanently employed design staff, it would be possible to recruit additional design staff on a contract basis. Printing is in any case contracted out to independent printing firms, and their is generally sufficient spare capacity. Most of Universitetsforlaget's publications (80%) sell between 1000 and 3000 copies.

Last year, Universitetsforlaget experimented with eight pre-planning projects, to see whether it should be involved more with multi-media projects, and if so, what this would entail. These projects had proved to be very useful internally, and subsequently, Universitetsforlaget has formally submitted these projects to NFU for consideration as possible future projects. A number of conclusions had resulted from the experiment:

a. it was essential that the right resource people were chosen (i.e subject experts) and that they were given enough time and freedom to work out a course;

b. proper servicing of the working groups, through a competent secretary for the group, was essential;

c. group work was very successful - there was high motivation, concrete proposals, and full discussion of fundamental issues, enabling conflicts in approach within the groups to be successfully resolved

It was thought important in Universitetsforlaget that there should be a steady, regular flow of work. It was impossible until specific requests had been received from NFU for Universitetsforlaget to specify how it would staff NFU projects, but it was likely that it would either have to hire new editors on a full-time basis, or employ contract

editors. It was thought better to start slowly with NFU, and build up resources gradually, in the light of experience.

The private publisher thought that from their point of view, the best arrangement would be to appoint an editor at a fairly high or middle level, to work individually within an NFU project team, but to have "back at base" a team of designers and production specialists under the leadership of the editor. The private publisher though pointed out the inportance of leaving the creation of materials in the hands of a small group of people. It was particularly important that the authors(or their equivalent in subject expertise) were given clear responsibility for the creative aspects, with of course contributions and co-ordination from and between the various technical people. Group work was important, but the individual parts of the course must be created by just a few key persons.

COSTS

It was difficult for any publisher to decide on how it would charge for its services in the absence of a specific request or project from NFU. Both Universitetsforlaget and the private publisher thought that it would be necessary to charge on a true cost basis. The private publisher thought that private publishers would not be wanting to make profits out of NFU projects. Since they were already in working agreements which in practice reduced book prices by subsidies and agreements with the government for non-commercial work, it was only right that an area aimed at the more disadvantaged sectors of society should be served by private publishers on a non-profit basis.

It was thought necessary at the beginning to establish costs on a project-by-project basis. Although without necessarily suggesting that this should be the system of costing to be used, the traditional practice in publishing is to base the costs on a percentage of the printing price. With variations depending on the type of publication, calculations of costs are often as follows:

	% of final retail price
Production	20%
Royalties	15%
Booksellers' discount	30%
Publicity	5%
Overheads	25%
Profit	5%
	100%

To obtain some idea of likely production costs, a number of different approaches was adopted. First of all, Universitetsforlaget obtained for me printing costs from three different, well-established Norwegian printers, for the printing of 10 different kinds of books (Table 16). A private publisher provided estimates for the production of a book for a language teaching course, based on an actual Swedish example. A correspondence school provided me with estimates for a course book for a new multi-media language course being produced in Norway at the moment. The two books were chosen deliberately, because they were similar in size and nature, one had already been designed and used good pedagogic and publishing design principles, and both were aimed at Scandinavian adult learners. The replies received were remarkably consistent, given the rather vague nature of my specifications.

First of all, the private publisher and Universitetsforlaget both came up with roughly the same breakdown of costs of the final retail price between production, royalties, etc. The similarity between production costs can be seen from Table 17 (page 7).

It can be seen from Table 16 that printing costs can vary considerably from printer to printer. This is particularly true of long runs, and the variation is due in large part to the kind of equipment owned by the printers. Furthermore, although these were firm quotations, it was considered unwise to rely on the lowest price each time. Price had to be balanced against experience in producing such publications. Thus in Table 16 the "best" offer,

Type of publication	Printer	Print run: 1000	5000	10000	50000
A. University monograph: type-set; multilith;	a.	25600	51200	83200	339200
no diagrams; no colour; 65 pages; A4;	b.	15000	43000	78000	358000
printed cover; spine binding; plastic cover	c.	10700	21700	35450	145450
B. Broadcast notes: justified print; designed	a.	63400	71400	81400	161400
diagrams; no colour; 50 pages; A4; no cover;	b.	54200	59120	65270	114470
loose leaf (stapled)	c.	30200	42200	57200	177000
C. Barnets utvikling: IBM type-set; printed;	a.	4490	-	13490	53490
no diagrams; no colour; 12 pages; 17 x 14	b.	-	-	7200	24400
cm.; printed cover; staple binding	c.	-	-	12000	40400
D. Mediärnas Värld: justified print; many	a.	10300	-	20200	64200
photos; no colour; 15 pages; A4; printed	b.	-	-	21800	85800
cover (photo); staple binding	c.	-	-	13800	39800
E. Forstår vi undervisnings målene? type-script;	a.	36900	-	79110	97870
multi-lith; no diagrams; no colour; 150	b.	-	-	50300	65100
pages; A5; printed cover; glue binding	c.	-	-	66000	84400
F. The use of TV in adult education: justified	a.	26300	-	64100	232000
print; no diagrams; no colour; 120 pages;	b.	-	-	42800	142800
19 x 13 cm.; printed cover; glue binding	c.	-	-	53000	185000
G. Där du bor: justified print; diagrams, maps,	a.	-	-	194600	406600
drawings; two-colour; 170 pages; A4; two-	b.	-	-	217400	673400
colour print; 5 multi-colour covers; glue-	c.	-	-	254500	741300
binding; multi-coloured folder					
H. Trafikolycka: typeset; printed; line-	a.	20000	-	43040	145440
drawings and photos; two-colour; 32 pages;	b.	-	-	30500	88500
A4; printed covers; staple binding	c.	-	-	46000	98000

Table 16: Printing costs for different kinds of publication

Table 16 (cont.)

Type of publication	Printer	Print run 1000	5000	10000	50000
I. Analysis of populations: justified print; diagrams, photos, maps, graphs; one colour, with two full-colour sheets; 110 pages; A4; printed, two-colour cover; glue binding	a.	78900	-	131100	363100
	b.	-	-	120900	310900
	c.	-	-	96000	200000
J: Start, Books 1,2, and 3: justified print; diagrams and drawings; two colour; 116, 130 and 160 pages; 17 x 24 cms; multi-coloured covers; glue binding	a.	-	-	296000	668000
	b.	-	-	250000	682000
	c.	-	-	308000	708000

	Print run: 10000		1000	100000
Publisher	Private	Correspondence	Private	
Origin of book	Sweden	Norway	Sweden	
Format	15,5 x 23 cm.	16,5 x 23 cm.	15,5 x 23 cm.	
Colours: print	2	1	2	
Colours: cover	4	4	4	
Editing/repro	18720	15000	18720	18720
Illustrations	9000	13500	9000	9000
Design work	5000	7000	5000	5000
Proof reading	-	2000	-	-
Printing/paper	44240	43900	19770	151190
Binding/other costs	10240	10000	1740	41900
Total	87200	91400	54230	225810
Per book	8,72	9,14	54,23	4,52

Table 17: Comparison on publishing production costs between two publishers and two books.

combining price and experience, has been blocked out. In any case, these should be seen as no more than order of magnitude costs, enabling a rough fix to be obtained, in comparison with other costs. The other point to be noted is the wide variety in cost according to the kind of publication. Där du bor and Start are typical Scandinavian adult education printed packages. Där du bor material covered a resource text on facts, suggestions for projects, and practical advice on how to carry out projects. Start books cover one year's study each, and are full of exercises, diagrams, cartoons, etc. Both these would be main or "core" material. On the other hand, Mediernas Värld's booklet was just a short set of notes to accompany five television programmes.

However, Table 16 merely covers the cost of printing and binding. Before a publication reaches that stage, it has to be designed. Table 17 indicates some of the other costs involved for a run of 10000 copies of 2 120-130 page books, of the Start kind.

It is important to notice the difference between fixed and variable costs. The fixed costs, for editing, proof-reading, illustrations and design-work, are independent of the size of the print-run. Paper, printing and binding costs are dependent on the number of copies produced. The fixed production costs of a book like "Start 1" are around 30 000 - 40 000 kr.

If the books were to be distributed through bookshops, all the other costs, for royalties, distribution, overheads, etc., would have to be added. Thus the shop price per book would be around 45 kr. for a run of 10 000.

DISTRIBUTION

Both Universitetsforlaget and the private publisher stressed the need for NFU to make full use of bookshops. It was thought important from a cultural and educational point of view to maintain an effective net of good bookshops, and to avoid the situation in Sweden, where several private booksellers have had to close down, and where there are examples of local kommunes who have found it necessary to subsidise their local booksellers directly. Many of the publishers in Norway distribute through their own or jointly shared wharehouses, although the booksellers' association also has its own distribution system. Both publishers thought it was important that NFU should consult closely with the booksellers' association.

PUBLISHERS AND NFU

Universitetsforlaget would initially want to work on a project-by-project basis. Careful note would need to be made of actual costs. Possibly later, a more specific agreement might be drawn up. For instance, Universitetsforlaget has developed an agreement in a similar way with the Norwegian Council for Research in the Humanities. However, Universitetsforlaget did not want an exclusive agreement with NFU. It was quite willing to work on a project-by-project basis,

in the same way as other publishers, while at the same time being willing to guarantee to provide NFU with publishing facilities, if none of the private companies were able or willing to do this.

At least one private publisher was not happy with the Interimsstyret's draft agreement with Universitetsforlaget, which was seen as giving Universitetsforlaget a prior and privileged position. The private publisher suggested that instead, there should be a small sub-committee of three members: one from NFU, one from Universitetsforlaget, and one representative from Den norske Forleggerforening (the publishers' association). This would provide a mechanism for guidance and decision-making on publishing matters, including suggesting an appropriate publisher for projects. In this way, the private publishers' fears that the first contact will always be through Universitetsforlaget would be allayed.

It was felt that there would be no difficulty in using Den norske Forleggerforening in this way. It has a special board for lærerbok, which had built up a good, co-operative relationship between private publishers, through projects for Forsøksrådet, and the State committee on educational publishing. There is an agreed procedure for the announcement of new projects and how to respond, and an official board for choosing projects. The proposed sub-committee would not be members of the NFU pre-project group (it was believed most strongly that this should be independent of any possible interested production organisations) but would give the pre-project group advice on publishing issues. It was thought that such an arrangement was not only fairer to private publishers, but would be more likely to get them interested and involved in NFU projects. These were not likely to be attractive commercially, often having small print-runs aimed at minority groups. The profit side was though not of great interest, with regard to NFU projects, but it was important that the work was spread around the various types of publishers.

COMMENTS AND CONCLUSIONS

1. Choice of publishers

I have no particular comments to make on the mechanism for choosing and consulting publishers. This is clearly an issue for negotiation between NFU, Den norske Forleggerforening and Universitetsforlaget, and does not directly affect the pedagogic or even financial issues. I would just point out that there is one group of interested parties which would not be represented by such an arrangement as proposed by the private publisher, and that is some of the correspondence schools, who have their own "sister" publishing company, but are not always represented in Den norske Forleggerforening. It is more than likely that there would be advantages to NFU in combining a correspondence school's registration, tutoring and publishing facilities. It is important then that correspondence schools with publishing interests are also fully represented in any discussions about choice of publishers for NFU projects.

2. Costs.

Even more than in other areas, getting a fix on costs for publishing without a specific project in mind is extremely difficult. There are though some important issues of principle about costing which have yet to be decided. This can best be seen by looking at the usual costing procedure of publishers listed on page 4, whereby a cost for production is calculated (including printing). From this figure, which is normally reckoned to be from about one third to one fifth of the final retail price, figures for overheads, booksellers' margins, royalties, and profits are calculated on a percentage of the retail price. I am not sure if this procedure will be altogether suitable for the kind of multi-media project being envisaged for NFU. This can be seen by looking at each of the separate headings.

a. Distribution. The largest cost component of a book sold through shops is the booksellers' margin of around 30%. But will NFU be distributing through bookshops? If students register with NFU or an agent, it is likely that distribution of printed material will be direct by post to the students' homes, for at least two reasons. The first is cost. The cost of mailing the kind of book costed in Table 17 would be 4kr. by ordinary mail, or 2 kr. by printed paper rate. Either rate is substantially below 30% of the retail price of such a book. Ordinary mail would be under 10% and printed paper rate would be under 5%. Even allowing for packing and labour costs, this is much cheaper than using booksellers. There is also a pedagogic reason for mailing. If NFU is concerned to reach the more isolated or remote students, it is not helpful if they have to travel to the nearest bookshop. If they have to order by mail through book retailers, why not order direct instead from the registration centre? This is not to deny the political and social advantages of NFU courses being distributed through bookshops, but there is a cost in doing this, both economically and pedagogically. On the other hand, there may be grounds for making NFU books available as well through bookshops - in the same way as Open University in Britain markets its books. In other words, it could be arranged so that enrolled students get their books free, mailed directly, as part of the course, but non-enrolled students can purchase books in the normal way, through bookshops.

b. Royalties. It still has to be resolved whether authors who contribute to courses will be paid a flat fee contract, or will be paid a royalty. It seems to me highly unlikely that NFU would arrange authors' contracts on a royalty basis, at least for enrolled students. This would make it much more rewarding for authors to work on highly popular courses - such as language courses - than on courses aimed at small minority groups - such as handicapped people.

c. Publicity. Publicity for NFU courses will be essential. The Open University, for instance, can show that enrollment

- or rather applications - are directly in proportion to the amount of money spent on advertising. Furthermore, to attract one student with a low level of previous education requires 10 times the expenditure in advertising than to reach a student with University entrance qualifications.

The principle has to be resolved whether each co-operative partner in an NFU project will be responsible for its own advertising, or whether advertising will be co-ordinated, with a central, project budget. For the purposes of estimating possible costs for a project (see Section 11), I have assumed that there will be a separate budget for publicity, for each project.

d. Overheads. Overheads normally run at about 25% of the retail price of a book, or at about 100-130% of the production costs. If though books were to be distributed directly, if royalties were not to be paid out of book sales, and if publicity were to have a separate budget, it would seem safer and fairer for publishers to estimate overheads as a percentage of production costs, as this covers both fixed and variable costs. Thus one suggestion would be to fix overheads at 125% of production costs, possibly higher for a low print run, and possibly lower for a large print run.

e. Total publishing costs. If it is assumed then that there will be a separate budget for authors' fees, to cover contributions both to printed and audio-visual material, and also for publicity, and that distribution will be by mail at printed paper rate, plus an additional 10% of the printing costs to cover handling, packing and other contingencies, and finally that publishers themselves are not necessarily responsible for distribution, it is possible to estimate print costs for courses of various sizes, over a four-year period. I have estimated costs for two kinds of publication: a main text of the "Start" type, sufficient to cover about 16 weeks study; and supplementary printed material, based on the Mediernas Värld format, printed, and up-dated each year (in other words, four separate print runs over the four years). These costs are listed in Table 18:

No. of students per year	500	1000	5000	10000	50000
No. of students over four years (i.e. print run for main text)	2000	4000	20000	40000	200000
Main text: a. production	40000	40000	40000	40000	40000
b. printing	40000	55000	100000	175000	330000
c. overheads (125% of a.+b.)	100000	118750	175000	268750	462500
d. postage (2 kr. each)	4000	8000	40000	80000	400000
e. handling (10% of printing)	4000	5500	10000	17500	33000
Total	188000	227250	365000	581250	1265500
Supplementary material					
a. production	15000	15000	15000	15000	15000
b. printing	10000	12000	18000	22000	60000
c. overheads (125% of a.+b.)	31250	33750	41250	46250	93750
d. post (1.4 kr. each)	700	1400	7000	14000	70000
e. handling (10% of printing)	1000	1200	1800	2200	6000
Total: (for one year)	57950	63350	83050	99450	244750
Total: (for four years)	231800	253400	332200	397800	979000

Table 18 : Costs for printed material.

For a course of about 5000 students a year, over four years, the cost for a main text works out about 300000 to 400000 kr., or between 15 and 20 kr. per student; supplementary material works out at about 300000 to 350000 kr., or about 15 to 17,5 kr. per student. It can be seen that for courses with less than 5000 students, the supplementary materials will actually cost more than the main text, if they have to be changed each year.

3. The importance of print. The role and importance of different media will change from course to course. If the course though demands anything in the way of intellectual knowledge and learning, print materials will be crucial. It is indeed difficult to imagine any course with serious objectives without a substantial printed element. Fortunately, costs do not seem to be of a major order of magnitude, and Norway seems well served with a range of possible sources of production and printing.

REFERENCES

4. KUD Innst. S. nr. 218: Instilling fra kirke- og undervisningskomitéen om fjernundervisning. Oslo: KUD, 1977.

5. KUD Instilling fra Interimsstyret for Norsk fjernundervisning om Norsk fjernundervisnings organisasjon. Oslo: KUD, 1978.

SECTION 9

ORGANISATION IN THE FIELD

9. ORGANISATION IN THE FIELD

GENERAL

In 1975-76, there were 585 810 course enrolments in officially recognised adult education classes in Norway.[37] Since earlier research established that the average for each participant is 1,5 courses a year,[38] approximately 400000 adults participated in adult education classes, or about 13% of the adult population over 15 years old. Altogether, 45 598 courses were organized, of an average length of 43 lessons per course.

There are 37 voluntary organisations engaged in adult education activities, 32 of which belong to Samnemnda, an association of adult education organisations. The voluntary organisations ran 64% of the courses for 75% of the participants in 1975-76. The public sector (schools and other public organisers) ran courses for 17% of the participants, and the remainder were run by private schools and organisations. Within the 37 voluntary organisations, by far the largest number of courses and participants were organised by Folke-universitet (30% of all participants) and A.O.F. (Workers' Educational Association - 23% of all participants).

Most classes (83%) were held in the evenings, and most participants (82%) took part in classes with a teacher. Nevertheless, there were 40 454 participants in study groups without a teacher and 51 976 in study groups held in conjunction with correspondence courses. There were also 3 708 participants in classes run in conjunction with radio or television programmes, the great majority of which (83%) were following language courses.

Table 22 (over) lists the main classification of courses in the statistics of adult education. It can be seen that there is a very wide range of different courses on offer. The largest sector are courses in the humanities, religion, and fine and applied arts (32%), and language courses (17%) is the most popular single group of subjects. Business

No. of courses	Main headings		Sub-headings	
	No.	%	No.	%
Basic chools courses	2385	5%		
Part-exam: gymnas			1386	3%
Humanities; religion; fine/applied arts	14387	32%		
Languages			7542	17%
Religion			1674	4%
Visual arts			1838	4%
Applied arts			1226	3%
Teacher Training	564	1%		
Business administration, social sciences	11651	26%		
Administration (commercial and business)			3040	7%
General commercial			1158	3%
Clerical			1328	3%
Economics			1116	2%
Social and behavioral science			2943	6%
Trade;Craft;natural science;maths.;engineering	7832	17%		
Textile and leather trade			4072	9%
Woodwork and construction			1017	2%
Transport and communications	1106	2%		
Health-related auxiliary programmes	1902	4%		
Nursing				
Agriculture; forestry; fisheries	1147	3%		
Service and military programmes	2657	6%		
Domestic science			1245	3%
Other programmes	1844	4%		
Unknown	123	-		
Total	45598	100%		69%

Table 22: Classification of adult education courses (group study)[37]

studies and courses in the social sciences provide 26% of the courses, and trades, crafts, science, mathematics and engineering courses constitute 17%. These however are rather broad categories. A closer examination of Statistics of Adult Education shows that the main courses are as follows:

Subject area	Participants
English (short courses)	49 957
Languages (secondary school-exam)	11 782
Religion and theology	23 827
Music	10 122
Short art courses (e.g.rosemaling)	16 804
Teacher training	11 771
Trades Union studies	27 584
Commercial training	11 933
Social studies	31 216
Weaving	12 745
Sewing and embroidery	19 893
Woodworking and construction	10 710
Driving test and other traffic	10 300
First aid	17 670
Domestic science/cookery	14 269
Course for sports instructors	11 758
Keep-fit and training courses	12 832
Folk-dancing	9 942

There are three main points to note. First, there is a very wide range of course on offer. No single subject area predominates. On the other hand, course enrolments in any particular subject area is comparatively small. Since many of the subjects listed above are broken down into various levels, it seems likely that there are very few subject areas studied by more than 10 000 participants throughout the country. Thirdly, the main subject areas which seem to have the largest number of participants are foreign languages, traditional Norwegian arts and crafts, religion, social studies, and trades union studies, reflecting, to a large extent, the interests of the voluntary organisations responsible for running a large part of the courses.

THE VOLUNTARY ORGANISATIONS

75% of those attending adult education classes do so through courses provided by the voluntary associations. The recent law of adult education separates responsibilities between voluntary organisations and public school system. The public school system is responsible for the running of adult education courses in subjects which cover the basic school curruculum, and leading to recognised qualifications, although it can pay the voluntary organisations to run such courses on behalf of the kommuner or fylker; The voluntary organisations are responsible for running courses which are not part of the normal school curruculum, or which do not lead to public examinations.

There are four kinds of study groups, each with their own regulations and qualifications for State financial support:

1. Study circles at a higher education level. In 1978, 11 million kr. was set aside by KUD to support study circles at a higher education level. For instance, Folkeuniversitet has University-level study circles organised in about 50 different centres. These students study on courses run by Folkeuniversitet, but follow a curriculum laid down by the universities and regional colleges, students taking examinations set by these bodies. Only part of a University degree can be taken this way. The rest must be taken full-time on the campus. The State subsidises costs as follows:

Teachers' pay:	80% of 260 kr/hr. (max)
Study material, books:	80% of 50 kr/student
Travel and subsistence for lecturer:	80%
Local administration:	24 kr/hr.
Central administration:	10% of total above.

There must be a minimum of 10 students per circle, who complete the course, which must have at least 12 hours tuition. The course must be recognised by the regional high school board (courses cover both regional high school and University

levels).

2. Other study circles. The voluntary organisations can run their own study circles or classes, either with or without a teacher. These cover areas not covered by the local kommuner or fylker. The State subsidises costs as follows:

Teachers' pay:	80% of 85kr/hr.(max)
Study material, books:	80% of 50 kr/student (max)
Local administration:	15 kr. per hr.
Central administration:	10% of total above

There must be a minimum of five participants per circle, who complete the course, which must have at least 9 hours tuition.

3. Evening classes. These are classes which still remain from the "old" system, before the new law, but which have not yet been taken over by the kommuner or fylker. The regulations are more or less the same as for (2) above, except that the class must have a minimum of eight participants.

4. Correspondence circles. These are groups enabling correspondence students to meet together, and apart from costs for local and central administration, are subsidised through the relevant correspondence school.

By far the largest category of classes come under (2) above.

Usually, there are local boards covering each kommune, at least for A.O.F. and Folkeuniversitet For instance, Folkeuniversitet has 350 local centres. The local boards decide what courses to run, although in each county, the larger organisations have a full-time co-ordinator and advisor. Most organisations use rooms and facilities in local schools, without charge.

Finstad and Hansen[39] carried out a study of participants in A.O.F. external courses. In a question to course leaders, they found that barely one-third made free use of school A/V material, a similar proportion said that A.O.F. provided necessary materials, and 21,5% did not make use of school materials. They concluded that there is still a long way to go before schools' facilities are fully available for use by the voluntary organisations. The main problem, they argue, is that arrangements for control and maintenance of eqquipment are not yet good enough. There is a reluctance to pay for co-operation that would guarantee the use of materials for others than the regular school teachers. These conclusions though should be treated with some caution. The study was carried out 1975, and there is now a clearer commitment on the part of schools to make facilities available for adult education purposes, as a result of the law of adult education. Furthermore, two-thirds of the group leaders did actually use or were satisfied with the provisions available. The fact that Finstad and Hansen found that group leaders were mainly traditional in their approach, and lacked to a large extent self-confidence in their own competence (many not being trained teachers) might also account for some of the failure to use schools' A/V resources. Nevertheless, Finstad and Hansen's study does emphasise the practical difficulties that will arise in the use of school facilities for adult education purposes.

Finstad and Hansen's study also raises the question of the kind of teaching methods used in classes. Hansen[40] would like the educational provision for adults to be quite different from the traditional forms of education offered to adults. He would like to see participants themselves deciding on and guiding their own studies, with the evaluation of their activities being carried out by the participants themselves. Their own experience and knowledge should be developed as a resource, with help from group leaders to develop a more critical and analytic approach to their experience.

However, Finstad and Hansen's study found that most classes - even in A.O.F. - were run on a more traditional basis. They

also found that the background of enrolled participants was similar to that found in Sweden and Britain, i.e. that it was primarily people under 40 who participated, with already a good basic education. In this respect, two studies being carried out by Norsk Voksenpedagogisk institutt will be particularly relevant. Skaalvik is carrying out an extensive study of participants in adult education courses in Trøndelag, in conjunction with a national survey being carried out by the Central Statistics Office. This report will be ready in early 1979, and should indicate clearly which kinds of people are and are not participating fully in "traditional" adult education courses, based on group or class studies. At the same time, Brattsett is carrying out a survey of the methods used in planning and teaching adult education courses, based on a 100 courses in 12 different organisations. This report will be ready around the end of this year.

THE PUBLIC EDUCATION SYSTEM

The new law of adult education specifies more clearly the responsibility of the public school sector to provide courses for adults covering the basic school and higher education curriculum, leading to recognised public examinations. At the moment, these activities are carried out in most areas by the voluntary organisations, but increasingly these activities are likely to be carried out by the kommuner and fylker themselves. The kommuner are responsible for courses in the grunnskoler range (i.e. courses covering the age-range 7 to 16 in the school system) and the fylker for courses in the videregående range (academic and vocational, 16 to 19 years old). Regional colleges and universities are responsible for higher education courses. Since the new law was passed only last year, it remains to be seen how these bodies will interpret the law, and the extent to which they will use traditional class-based tuition, and the extent to which they will want to use distance teaching methods. Two fylker already though (Nordland and Finnmark) have shown interest in running their own distance education courses

for adults. The possibility of increased activity in this area can be seen in the appointment by Sør-Trøndelag fylke of a full-time studierektor for voksenopplæring, whose job is to co-ordinate the different course proposals from the county and the voluntary organisations. Co-ordination is likely to become increasingly important. Minimum size of enrolments for a recognised adult course in the public school sector is 8, and in Sør-Trøndelag this year, demand for resources for videregående courses was double the resources available. The total budget for adult education at the videregående level in Sør-Trøndelag - paid for entirely from the fylke budget - for 1979 was 3 051 950 kr., of which 18% was for skoleverket (courses run by the fylke itself), 33% for A.O.F. and 41% for Folkuniversitetet.

LIBRARIES

There are 1360 libraries in Norway, and 450 library systems. Each kommune has its own library, sometimes with small branches in outlying areas. There are 20 county libraries, which lend to the kommune libraries, and provide back-up facilities.

Very many of the small branches cover between 200 to 300 people only. These are open for 2 - 4 hours a week, as suggested in State regulations. A few of the newer branch libraries have mobile racks and space for meetings, but many of the older branch libraries would be unsuitable for small group or individual study.

There are about 30 mobile libraries run by fylker or kommuner. 50% of the running costs are covered by the State, and 50% by the fylke or kommune. The capital cost though has to be found by the fylke or kommune, and since this is about 400 000 to 500 000 kr. each, they are not widely available. From 1978, though, the State can help with the purchasing of mobile libraries for kommuner with special financial difficulties. Where they are available, they are generally very popular.

There is no objection in principle to using libraries

as meeting rooms, especially when they are not open for lending purposes. It would be possible, it was reported, for adult learners enrolled in approved courses to have keys to libraries for study purposes, when libraries were not open. Since in 1971, 94% were open less than 10 hours a week,[41] there would be plenty of opportunity for students to use libraries, in this way.

In 1977, 348 libraries (26%) had A/V equipment[41], although exactly what kind was not stated. In 1975, 190 (14%) had cassettes of language courses. It was thought though by several people interviewed that there were very few, if any, libraries with television sets, video-cassette machines or 16 mm film projectors, and there is no policy at the moment to equip libraries as local A/V resource centres. Priority is to increase stocks of books available to the public.

There is a comprehensive system for obtaining books on request or on reservation. Someone asking for a particular book at his local branch library would have the following network at his disposal: local branch to main kommune library to county library to Deichmanske central library, Oslo, to special libraries (research/universities, etc.).

Libraries could make available books for NFU courses, if warned in adequate time. At least six months notice would be required. If Statens bibliotektilsyn was notified, it would ensure that the required books were listed and published in the specialist library journals. Libraries though would need to know the likely demand, and the books of course would have to be made available to other users when the courses were over. It would be possible for someone in each of the 20 county libraries to take on responsibility for liaison between NFU and the libraries. It would almost certainly be the county libraries who would purchase extra copies of books for NFU purposes, then make them available to the local libraries.

At all levels, from Statens bibliotektilsyn to the kommune library in Røros, there was a strong desire for the libraries to play a key role in distance education. The feeling was deeply felt by some working in the public library service that NFU was being planned without proper consultation with the library service. Some wanted a representative from the libraries on the board or council for NFU, and representatives from county libraries in each project planning group. Libraries have never had any formal connection with adult education before. At a meeting in Gjøvik in July,librarians made a formal request to Samnemnda and Statens bibliotektilsysn to get together and establish exactly what service was required, and for this to be a major topic at the next Samnemnda annual meeting in February.

GRASS-ROOTS: PROVISION IN RØROS

Røros was visited as an example of the kind of area that ought to be able to benefit from the development of NFU. It is located 156 kms. south-east of Trondheim, in Sør-Trøndelag. It has a population of 5330 in 1978, scattered across a wide area around the town of Røros. Most of the people are engaged in agricultural and forestry activities, the copper mine for which it is famous having finally closed down completely last year.

The fylke skoleverket ran no courses itself in Røros, but contracted A.O.F. to provide handelsskole courses (commercial studies) and Folkeuniversitet to provide courses in Norwegian, English, German, and farming. A.O.F. and Friundervisning were the only two organisations to offer classes in Røros. A.O.F. offered 43 different courses in Røros, and another 8 courses not available in Røros at Os, about 14 kms. away. A.O.F. ran a number of multi-media courses in Røros: "Start" (levels 1 to 4), combining text, audio-cassettes and class tuition; commercial studies, which were run as "kombinert" classes (face-to-face tuition, plus correspondence teaching arranged through Folkets Brevskole); and accountancy (arranged in the same way as commercial courses). Many of the A.O.F. classes dealt with traditional and local crafts, such as rosemaling, forestry, tree-maintenance and felling, killing

of reindeer and preparation of reindeer meat, as well as the usual courses for union representatives, commercial courses and languages. Friundervisning offered a total of 85 different courses, grouped as follows:

Group	No. of courses.
Higher education courses	4
Basic school courses	5
Commercial studies	7
Business management	4
Agriculture	4
Technical subjects	5
Computing ("kombinert" with Skandinavisk Inst.)	3
Languages	7
Music and dance	13
House, home and family	8
Old traditions (mainly crafts)	5
Miscellaneous	14
Courses for senior citizens	6

Facilities in the Røros area for the reception of television and radio were excellent, as was the telephone service. Most homes, particularly in the country areas, were thought to have phones. Several years ago, schools in some of the smaller hamlets were closed down. The buildings are still there, and they could be used for meetings. So too could the existing schools. There were two grunnskoler and two videregåendeskoler in Røros town itself, and two schools outside the town, at Glåmos and Brekken. The skolestyre would allow adults enrolled for recognised NFU courses to have their own key, and use school facilities for study purposes, either individually or in groups. It was thought that there would be no difficulty or objection by participants in meeting in each others homes, either. It had just recently been agreed that the voluntary organisations should have access to school equipment, such as looms, and the same privileges could be extended to NFU students.

The main library, in Røros town, and the two branch libraries in Glåmos and Brekken, are attached to or located in schools, and are combined with the school library.

In 1977, there were 18 579 loans of books from Røros libraries (including 7 766 from the school library). About half these loans were non-fiction. There has been a rapid increase in the use of the Røros libraries in recent years - a 50% increase in demand each year. The peak time used to be between October and April, but demand is now extensive throughout the year. An audio library for language tapes is also being considered.

The libraries in Røros kommune are open at the following times:

	Røros town	Glåmos	Brekken
Monday	-	17 - 19	-
Tuesday	11 - 13.30	-	18 - 20
	17 - 19*		
Wednesday	16 - 19	-	-
Thursday	11 - 13.30	-	11 - 13
	17 - 19*	-	-
Friday	-	17 - 19	-
Lørdag	11 - 14	-	-
Total	15 hrs.	4 hrs.	4 hrs.

*School library, pupils only.

In 1978, a total of about 67 000 kr. was spent on books for Røros, of which about 10 000 kr. was for the school library. About 1 600 new books are now being bought each year (including books for the school library), at an average cost of around 40 kr. a book. Costs are split evenly between the kommune and the State. The main library has attached to it(and to the school with which it shares a site) a large, well-equipped class-room big enough to take a class of 30, which could be used for adult education classes.

There were clearly difficulties in providing adult education in Røros. The Friundervisning studieleder mentioned difficulties in finding local teachers for some of the courses in demand. For instance, they would like to offer courses in computer techniques and Spanish, but there were no appropriate teachers available. The local representatives also agreed about the need for courses for those looking after the elderly or handicapped.

The view was also expressed that courses were mainly available to those who lived in or near to the town. It was pointed out that some people had to make a round trip of between 70 to 100 kilometers if they wanted to take part in a course. Even grunnskole children from outlying areas had to stay in Røros during the week, in order to attend school.

Most felt that there was a real need for new methods. It was recognised that a main reason for adults taking part in classes was the opportunity it gave for socialising with others. At the same time, those living in outlying areas found it difficult to join in such classes. For these people, an alternative method of study would be useful. It was thought that adults would be willing to study independently, provided that there was a framework of support. One of the representatives who had taken part in a correspondence course stated the need for direct, personal contact with a tutor, who should be as close as possible, or at least contactable by telephone. The idea of a local counsellor, responsible for advice and support for local students, was strongly supported. The new law of adult education offers opportunities for the creation of such posts. The Kulturstyre in each kommune has a sub-committee which represents those organisations in the community offering adult education classes, both public and independent. This sub-committee could recommend the appointment of a paid, independent counsellor, who could provide advice on the whole range of courses available (correspondence as well as face-to-face), provide help or advice for students working independently, and in case of difficulties provide them with contacts in other areas who could give specia-

list help, or with other students working in isolation in the same area. Such a counsellor could also act as a direct point of contact in each kommune for NFU.

The importance of recruitment methods were also stressed. Norges husmorforbund wanted to put on a course on tractor maintenance and repairs, for wives and daughters living on farms. When the course was advertised in the normal way, through a newspaper advertisement, there were no applicants for the course, However, members of Norges husmorforbund were asked to approach friends or acquaintances personally, to give information about this course. When approached in this way, many of the women showed interest, and the course was fully enrolled. There were particular problems for the smaller voluntary organisations in providing courses. Most worked on a county basis, either providing occasional weekend courses in Trondheim or one of the other major towns, or by providing correspondence courses. Some had to use A.O.F. or Folkeuniversitet catalogues to carry their advertising, or otherwise rely entirely on advertisements in local papers. There was no one single catalogue, setting out all the facilities and courses available in the Røros area.

COMMENTS AND CONCLUSIONS

1. Gaps and duplication in the provision of courses.

The visit to Røros showed that although adult education provision is impressive on a national scale, and even at a local level is impressive in quantitative terms, with over 130 different courses on offer in the Røros area, there are still important gaps in the system which NFU could help to fill. There are still people who live too far away from Røros town to be able to attend classes regularly, and there are still courses requested and needed which cannot be provided due to a lack of appropriate teachers locally. Much could be done to fill these gaps by building on already existing material, in the form of books, lecture notes, and correspondence services, to make available courses already existing in the big towns or even smaller towns to those who live in more remote areas. At the same time, there

is clearly a need to avoid duplication between skoleverket, A.O.F. and Friundervisning. In Røros, both A.O.F. and Friundervisning were offering courses in the same subjects at the same level. When the target group is so small, it does not make sense to split them up between different organisations. Also, there was no central locus for information on courses locally available. There is clearly a need for local co-ordination, and a need for a neutral look at local provision. It will be very important then for NFU to avoid further duplication at a local level.

2. Local centres.

It is clear that there is much goodwill towards NFU, particularly at a local level. Both the schools and the libraries are eager to co-operate, and make facilities available. The voluntary organisations also hope to receive a strengthening of their services through NFU. But what exactly does NFU want or need in the way of local provision? It is important to look at some of the possible functions of a local centre. First of all, it must be recognised that if there are eight people locally who want to follow a course, in most cases their needs can be adequately met by existing provision. So we are considering the needs of individuals, or at most two or three people in an area. What could a local centre provide for these people?

Perhaps the most important is the access to specialist equipment, or facilities that the student does not have at home. These are most likely to be audio-visual equipment, such as a video replay machine. It may also be the need to use a telephone for contact with a tutor (see Section 6). It may also be to borrow books. Just possibly, it might be to meet with other students, although this could be done in one of the students houses. It may also be to meet a "travelling" tutor, who calls once or twice during the course. If there are large enough numbers following a course, it may also be feasible to provide local tuition. Thus distance

education is not one, "pure" concept. The distance from a teacher may vary from almost complete independence, to regular face-to-face tuition at a local centre. NFU therefore will want to use centres which can meet this variety of needs.

The choice seems to be between schools and libraries. The advantage of libraries is that students will probably need to visit them anyway, if they need to borrow books for a course. Secondly, they are geared specifically to the provision of a service for adults. However, in general, schools are likely on most occasions to be more suitable as local centres. They are generally better equipped in terms of audio-visual media and other facilities that adult education students are likely to need. Students can still use the libraries to borrow books, and in any case, it is likely that students will have less reliance on already published books than on specially prepared material mailed to them directly. Most important of all, though, there are more schools - 4 602 of them in all, compared with 1360 libraries. In general, they are more likely to be accessible for students, particularly if some of the old, closed schools can be opened up again. The main doubt about schools is whether in fact students will be able to have access to equipment, especially expensive equipment like video-cassette machines. It is not so much a question of principle as of practice. In any case, there is no reason why a choice has to be made between schools or libraries. In some areas, the library may be more suitable; in others, the school. This kind of decision is best made on a local level, as are arrangements for access. But who will make these local arrangements on behalf of NFU?

3. The need for a local contact person.

Both the law of adult education,[42] and the Stortinget's proposition on fjernundervisning,[4] placed emphasis on the importance of local resource people for adult education. The Stortinget's proposition specifically gave powers to NFU to have direct contact with its students. But is this

necessary? Cannot the correspondence schools and the voluntary organisations provide this direct contact on behalf of NFU? The problem for NFU can be seen by looking at the chain of contacts it has to go through to get to the grass-roots. For instance, in Sør-Trøndelag, there are 18 different voluntary organisations who are members of the Sør-Trøndelag Samnemnd. Most of these do not have full-time, paid staff. There is though in Sør-Trøndelag, as in each of the other fylke, a Samnemnd contact person. Requests for help or co-operation from these organisations would require the local representative to contact each of these organisations, who would then get in touch with their representative for a particular area, who could then arrange for contacts or information to be collected from local participants or members and then sent back. Except for A.O.F. and Friundervisning, most of these representatives will be on a voluntary basis. Many of the smaller organisations in any case do not have local contacts, but operate on a county basis. This would be the way contact would be made in a particular area with all organisations covering that area. On a national basis, contact with participants through the voluntary organisations would be just as cumbersome. The request would go to Samnemnda. This would then get in contact with each of its 37 members. Each of these members would then get in contact with its local branches - in Folkeuniversitet's case, 350 branches. Even then, this method would be suitable only for contacting people through the voluntary organisations. It would not touch the 85% of the adult population who are not currently enrolled in voluntary organisations' courses. There are too many steps at which information can be misunderstood or filtered, and it would take too long. It is important then that NFU has an alternative and more direct means of contact with students, to be sure that courses are running properly, study needs are being met, and so on. But how can this be done?

The answer was suggested in Røros. The kommune kulturstyre or skolestyre can appoint a local counsellor for adult education within the kommune. He would be paid by the

kommune, and be independent. Such a person would be of great benefit, to adult education generally, and to NFU in particular. He could ensure local co-ordination in the provision of courses, be a central information point on the range of courses available, both on a face-to-face and on a correspondence basis. He could provide general advice and help to local students studying independently. He could be NFU's point of contact in each kommune. He could help organise local, self-help groups if there is no local teacher available, and make arrangements for local centres on behalf of NFU. Without such a contact person, it will be difficult for NFU to be sure of adequate coverage on the ground.

This does not mean that communication through the voluntary organisations' network will no longer be necessary. It will be essential for NFU to work through the organisations as well, but it will need to have a more direct contact with the grass-roots, if it is to avoid becoming a detached bureaucratic institution, out of touch with its target population.

4. Costs.

The need to be able to provide local services other than face-to-face group work under the guidance of a local teacher comes out clearly from an analysis of costs.

If we assume a short course of one semester of 16 weeks, with one hours tuition each week, for a course not at a higher education level, costs are likely to be as follows:

Teachers' costs: 85 kr. per hour
Teaching materials (books, etc): nil (covered under correspondence education or publishing - see Sections 7 and 8)
Local administration: 15 kr. per hour
Central administration: 10% of above, i.e. 10 kr.per hour.

Total: 110 kr. per hour x 16 = 1760 kr. per class

To provide some idea of costs for different levels of course enrolment, I have calculated costs on three different bases: an average enrolment per class of 10, 8 and 5. Since courses for 10000 or more are not likely to have class sizes below 10, I have not calculated costs for average size of 8 and 5, for courses with such high student numbers.

The costs are summarised in Table 23.

Size of classes	500	1000	5000	10000	50000
1 year					
10	88000	176000	888000	1760000	8880000
8	110880	221760	1108800	-	-
5	176000	352000	1760000	-	-
4 years					
10	352000	704000	3520000	7040000	5200000
8	443520	887040	4435200	-	-
5	704000	1408000	7040000	-	-

Table 23: Cost of class tuition (one hour per week : 16 weeks).

From this table, it can be seen that courses with an average size of 5 per student would cost 7 million kroner to run for four years, if there were 5000 enrolments a year. Alternatively, a course with 10000 students a year costs at least 7 million kr. to run, over four years, even with an average of 10 students per class. It must be remembered that this is the cost for 16 lessons. Courses for face-to-face tuition average 43 lessons, so these costs could be tripled for an average course, especially since these costs do not include study materials.

5. Conclusions.

Social contact is a very important part of adult education, and should be provided wherever possible. To insist though that the only viable form of adult education is that which is found in a group situation led by a paid teacher is not only dogmatic and untrue, but would deny the chance of adult education to many who need it. If local tuition cannot be provided through a local teacher, self-help groups should be organised. If there are not enough students in an area even for that, then telephone links and more heavy reliance on correspondence teaching and audio-visual media will be necessary. In any case, students working individually will need a local centre where they can have access to equipment - particularly A/V equipment - and possibly a meeting room; above all though they will need a local counsellor who knows his way around the adult education system, and can "fix" things for them locally.

REFERENCES

37. STATISTISK SENTRALBYRÅ Utdanningsstatistikk: Voksenopplæring 1975-76. Oslo: Statistisk Sentralbyrå, 1977

38. STATISTISK SENTRALBYRÅ Voksenopplæring 1969-74. Oslo: Statistisk Sentralbyrå, 1976.

39. FINSTAD, N. and HANSEN, H. Voksenopplæring for hvem? Oslo: Tiden Norsk Forlag/A.O.F., 1976.

40. HANSEN, H. Allment grunnkurs for voksne. Oslo: A.O.F., 1978

41. JORSTAD, A.L. Bibliotekene og Norsk fjernundervisning.

42. KUD St.prp.nr.9, 1975-76, om voksenopplæring. Oslo: KUD, 1976

4. KUD Innst.S.nr.218:Instilling fra KUD's komittéen om fjernundervisning. Oslo, KUD, 1977

SECTION 10

ADMINISTRATIVE ISSUES FOR NFU

10. ADMINISTRATIVE ISSUES FOR NFU

There are a number of general issues which cut across all media, and are to do with the administration of a multi-media distance education system. They are primarily questions about division of responsibility between NFU and the co-operating institutions.

REGISTRATION

Since there are social, political and educational reasons behind the establishment of NFU, it will need an adequate system of registration for students following NFU courses, not only to enable projects to be efficiently administered, but to give NFU information on the kind of people it is attracting - or failing to attract - to courses, and how successful or otherwise the courses are. In other words, it will require at least a minimal data bank on its students.

Setting up an adequate system of registration, especially when it has a dual purpose, is not a simple, straightforward business. For administrative purposes, all that is probably required is the name and address of the student, whether or not he has paid (if payment is necessary), and whether or not he has completed the course. If though registration is to serve also as a data base on students, then information about their social, educational and occupational background, as well as their progress on their courses, will be needed. It will be necessary to have a note of their tutor or tutors, records of progress on other courses, and separate records will be required for courses and students. If NFU is to be involved in several projects, and large numbers of students at any one time, addresses on labels for the various items to be despatched by students will need to be duplicated and printed several times for each student on each course. Data will need to be extracted regularly, payments arranged to tutors, and budgets monitored and checked. It seems quite clear to me that NFU will need a computerised registration and student records system.

What is not so clear is how this should be organised, and who should do it. There are three alternatives. First of all, NFU could set up its own registration system. This would mean hiring clerical staff, computer programmers, and buying,or hiring time on,a computer. An alternative would be to use an already existing government agency, and hire registration facilities. For instance, Statens trykkeri-ekspedisjon can distribute information to every school, all addresses being computerised, with related labelling service. Programmes would have to be written, and more clerical staff hired, within the State system. Another alternative would be to use the services of one of the large correspondence schools. The advantage of this is that they already have programmes and an adequate registration system. This would almost certainly cost less than NFU setting up its own system of registration. Using a State or commercial data processing service would almost certainly lead to problems with the first few projects, because in practice it is extremely difficult to get all the bugs out of a new system so that it works without trouble from the beginning. Using a correspondence school's existing system would almost certainly avoid that problem. On the other hand, there may be political difficulties for a State institution having to use the services of a private correspondence school (although it will probably have to do that anyway, as far as correspondence tuition is concerned). If a correspondence school is to be used, some form of contract will probably be necessary. The school would create a separate file or files for NFU courses and students, in such a way that the system was secure, i.e. only NFU could access the data.

It is important that,whatever system is developed for registration, it can meet the dual purpose of administration and a data bank, and that the system is compatible from one project to the next. This is an area which needs specialised advice from data processing specialists, especially if a flexible system is required, allowing co-operating partners access to the data bank. A decision will need to be made on basic principles regarding a registration system before

the first project is planned. Any attempt to deal with a registration system on an adhoc, project by project basis, is almost certain to cause major difficulties in later years, especially if the data is required for evaluative purposes.

Linked to this question is where, or with whom, students will register. There will need to be one address and one institution to which the student will communicate, with regards to registration and complaints about the course, non-delivery of materials, etc. Whether this should be NFU, or one of the co-operating partners, can perhaps be decided on a project basis. The confusion likely to be caused to students though if they have possibly four or five different institutions to communicate with regarding different aspects of the course is clearly to be avoided. Similarly, it should be clear to tutors what the lines of communication are, particularly if they are employed through one of the co-operating organisations. It is clearly NFU's responsibility to ensure that registration is efficiently handled, that records are kept in an appropriate form, that there is an effective and quick system of dealing with complaints and requests for help. It is difficult to see how this can happen if responsibility is divided between various organisations, on a project by project basis. It is also likely to be expensive.

CO-ORDINATION AND PROJECT CONTROL

One of the most important roles for NFU will be to ensure the integration of materials produced by different organisations, and to monitor the production progress of each of the different components as the project progresses. This will be one of the prime tasks of NFU staff on project groups. The more the different projects are integrated, the more the need for all products to be available on time. What about delivery of material, though? Should this be left to the individual producers, or should NFU attempt to co-ordinate it? For instance, a publisher may be

responsible for the design and production of the accompanying print material for an audio-vision packet, while another organisation is responsible for the production and copying of the cassettes. Should each of these organisations be responsible for separate mailing - so one day students get the cassettes, and perhaps two weeks later the accompanying printed material - or should NFU attempt to centralise the distribution of material, and hence increase the delay and possible bureaucracy involved? Should a correspondence school responsible for the tutoring component of a course issue instructions for its tutors on its own initiative, or should NFU be aware of what is going on? These questions can only be satisfactorily answered as projects begin to get developed, but they are matters which will need to be thought about early in a project, or during pre-project discussions or training, rather than at the last minute.

PUBLICITY

Publicity will be crucial to the success or otherwise of NFU projects (see also Section 8). The principle has to be resolved whether each co-operating partner will be responsible for publicity, or whether this will be handled on an overall project basis. In addition to the publicity for specific projects, NFU will need to spend a good deal of time promoting and explaining its activities and method of operation to the various organisations and in particular to those working in adult education at the grass roots. Publicity, whether handled by NFU itself or by the various co-operating partners, will require the expenditure of substantial sums of money, and will therefore need to be written in to the project costs.

EVALUATION AND RESEARCH

NFU will be a major innovation in the field of adult education, of interest not just in Norway, but internationally. It will require substantial State expenditure, and will be developing new forms of teaching materials, and above all

a new structure for co-operative working between State and independent organisations. Furthermore, it has a social purpose and certain aims to meet. Inevitably, some projects will be more successful than others, and there are numerous possible reasons why some projects might fail while others succeed. NFU will no doubt, like any other organisation, wish to be successful in its area of activities. These are all powerful reasons why NFU should actively encourage formal evaluation of its activities.

But should NFU carry out evaluation of its activities itself, or should it contract others to do this for it? First, it is useful to make a distinction between evaluation of the institution as a whole, and the evaluation of individual projects. Evaluation of the institute as a whole can really only be done externally, by society at large, and in particular those engaged professionally in the world of adult education. In the end, the final evaluation must be made by KUD and the government, who finance it. NFU however can do much itself to ensure a fair evaluation of its work. As well as the standard practice of writing annual reports, it could create a data bank of information on its activities, indicating enrolments, what kind of people enrol, drop-out rates, budgets for projects, and so on. It is extremely important for the purposes of evaluation that information is collected in a form which enables comparisons to be made from project to project. In other words, minimum basic data should be collected for every project, in such a way that the information is standardised, so that the same system of classification of previous education, employment, etc., is used from project to project. In addition, certain projects will require more specific information collected. The need for such a standardised system of course has major implications for registration and the data base.

In addition to such information which will enable external evaluation of its projects to be undertaken more realistically, there will be a need to evaluate individual projects. There will be at least three possible reasons

or purposes behind evaluation of individual projects, besides providing information for external evaluation. The first will be to find ways of improving a project while it is running - to improve the teaching materials during the course of the project. The second is to make a decision about whether to replace a course, or to let in run for another year or two. The third is to learn from earlier projects, so that later projects can be improved. Each of these rather different purposes will require a different approach to the collection of information and its analysis.

Evaluation of the work of NFU will take place in any case, without the collection of information in a systematic manner. However, the use of systematic, objectively collected, qualitative and quantitative information by professional evaluators will provide a more reliable and possibly more creative base for evaluation. To provide an adequate professional evaluation of projects requires skilled, specialist manpower, time,and money for the collection and analysis of data. Six months is probably the minimum man-power requirement for a project evaluation which aims to cover all three purposes suggested earlier. In particular, evaluating why a project succeeds or fails requires much more than just the collection of data from students and tutors on a course. It requires an examination of how a project is designed, the roles of the various co-operating organisations, and the reasons behind the creation of the course and the way it is decided to design it. In other words, such an evaluation - the most useful, in my view - has to start at the very beginning of a project, and must be geared specifically to the needs of NFU, in terms of improving a course, and improving the design of later courses. This also implies continuity from project to project, some way of carrying forward the experience of one project over to a new project, probably with different people and organisations involved.

The question then arises about whether there are competent evaluators of this kind in Norway, that is, evaluators capable of combining a knowledge of empirical research methods with an ability to set such research within an organisational analysis. The general view appears to be that there is no problem in finding people competent in empirical research methods, but there is a lack of people experienced in institutional evaluation. The problem for NFU is that those few people who do have such experience of applying empirical research to institutional decisions are already fully committed within their own organisations. For instance, both Rekkedal at NKI-skolen and Ljosså at NKS have carried out an impressive range of evaluative studies on correspondence education[33,35,36,43,44,45,46,47,48]. These are the kind of study required by NFU - studies on practical organisational decision-making - except that they are restricted to decisions within just the field of correspondence education. NRK has not staff employed internally who have carried out evaluative research on educational broadcasting, although there is an advisory committee - kontaktutvalget - which has a budget of 1 300 000 kr. a year from NRK for research into the whole range of NRK programmes. This committee had actually developed in 1975 a policy for research into NRK programmes made for NFU.. No doubt this could be amended and activated as soon as NFU gets going. However, this would merely make money available for evaluation, to be carried out by external people, probably from the universities. Once again, though, people such as Skaalvik, at the pedagogisk institutt, University of Trondheim, and Handal, at the pedagogisk forskningsinstitutt, University of Oslo, who have knowledge and experience of media research[49,9], are fully engaged in their own teaching and research programmes. It is possible though that these institutes could find and supervise post-graduate students to work on NFU evaluation projects.

There is one institute though specifically set up to carry out educational research and experimentation in the field of adult education, and that is Norsk Voksenpedagogisk

institutt, based at Trondheim. Currently, it has eight full-time staff, and several others on a contract basis:

Full-time	Project basis.
Director	3 researchers
2 researchers	4 project assistants
2 administrators	2 secretaries
1 research student/attachment	(Some of these are on a part-time basis)
2 secretaries	

Some of the research projects it is involved in have already been mentioned (section 9). These are the survey of participants in adult education classes in Trøndelag, and the survey of educational methods used in adult education. In addition, they have carried out a study which attempts to identify priority groups for adult education[50], and a survey of research and experimentation in adult education in Scandinavia[51], NVI being responsible for the Norwegian input to the study. NVI has also entered into a co-operative agreement with A.O.F. to carry out a continuous evaluation of the education of trades union representatives. One of the main functions that NVI has set for itself is the dissemination of information about developments and research in adult education, but adapted to the needs of the users, in simple, comprehensible language. It is also planning a conference next year on research in adult education.

It is clearly then within the frames of reference of NVI for it to be able to provide evaluation and research services for NFU. However, there are problems. In its report on future activities[52], it is noted that when development work begins in earnest, there will be an increasing need for more appointments. It can be seen that it has at the moment only two full-time researchers in established posts, and these will have other priorities across the whole field of adult education in Norway. The report also notes that NVI needs to build up experience and ability to work with co-operative partners: "users must not have too high expectations of research results in the early phases...NVI needs specialist support from other organisations who are engaged in research and development, not least in the starting phase."[52]

NVI is clear that it cannot help NFU directly in the development of materials - this must be NFU's responsibility. However, NVI's current studies, and likely future studies, do give NFU vital background material about the realities of adult education - what exists, what is being done, the educational philosophy and methodology actually being used, the kind of participants following adult education courses, the views of adult education participants on what they want from adult education. However, to provide evaluation of individual NFU projects, NVI would either have to increase its staff substantially, or contract out the research.

It seems to me then that, as far as the evaluation of individual projects is concerned, NFU will have to take responsibility for funding and commissioning them, and for making sure that they answer the kind of questions which are important to NFU, as an institution. This will require research which cuts across the boundaries of the contributions of individual co-operative partners, and looks at the problems of integration, delivery and group working, as well as at the more common problems of the educational effectiveness of the individual media.

For this reason, I believe it will be important to recruit and possibly train an evaluation specialist as one of NFU's education team. This person will be responsible for commissioning external people or institutions, such as NVI or university departments, to assist with the collection of data and its interpretation, but the NFU evaluator will be particularly concerned with ensuring that this data is collected and interpreted in such a way as to be relevant to the decisions that NFU has to make about projects, and he will also be responsible for looking very carefully at how different kinds of group working, different divisions of responsibility between co-operating organisations, and other factors associated with the design and implementation of projects, influence the effectiveness of a project. Where co-operating organisations already have their own research staff, these of course should be fully involved in evaluation,

But it will be important that projects as a whole are evaluated, as well. Each project should have an evaluation budget, and this money should be used to buy in assistance from NVI, universities or other institutes that have the capacity and relevant experience at the time of each project. It is particularly important in the early years for individual projects to be fully evaluated.

TRAINING

There will clearly be difficulties in finding full-time administrative and educational staff with experience in the production of integrated, multi-media distance education courses. Those with experience tend to be experienced in one particular area (for instance, correspondence education or broadcasting), and any case that experience will be needed within their own organisations.

Training requirements will be of two kinds: one for internal NFU staff; and training or orientation for staff in other institutions likely to be involved in the design of NFU projects. A particularly important group will be possible chairmen of pre-project and project groups, who will presumably come from outside NFU. Since at the time of writing, there has been no appointments of full-time staff to NFU, it is likely that there will be a conflict between the desire to get started on projects, and the desire to ensure that staff are properly trained before project planning begins. Nevertheless, experience from other distance education institutions suggests that there is nothing so good as training "on the job", with real problems to be faced and resolved. For these reasons, there is much to be said for basing most of the training in Norway, possibly combining some parts of the training for both internal NFU staff, and staff from co-operating organisations, on the planning for actual projects, but with the use of experienced external consultants working in the pre-project and project groups. It might be sensible though for at least the head of administration and head of education in NFU to have received a short training course abroad, if this turns out to be relevant on appointment.

The advantage of training on the job is that experience that already exists in one area (correspondance education, for instance) can then be shared with those with experience in other areas. The value of an external consultant with previous experience is that he can provide relevant information, warnings of unforeseen difficulties, and possible solutions and examples. There are a number of institutions to which NFU might look for external consultancy and training. Those with experience in working for TRU (now merged with Sveriges Radio's school broadcasting service, into the new organisation Utbildningsradion) probably have the closest experience to adult education in Norway, and have the advantage of having no language problems. However, their experience is likely to be mainly in the broadcasting area, and might well overlap with the experience that NRK itself would bring. Utbilningsradion is at the moment considering the possibility of setting up an external consultancy service. The major external consultancy service though for distance education projects is the Open University's. This has a regular studies programme of seven courses. These are:

1. How to prepare self-instructional teaching packages	£698 (7000 kr.)
2. The British Open University: a case-study	£349 (3500 kr.)
3. Planning a distance learning system	£776 (7800 kr.)
4. Curriculum design and development	£776 (7800 kr.)
5. The student's learning environment	£776 (7800 kr.)
6. Technical support services	£776 (7800 kr.)
7. Organization, administration and management	£776 (7800 kr.)

The last five courses are of more relevance. Fees include accommodation, but not meals. These courses are run every year. In addition, the Open University would be prepared to put forward a special training package of courses and on-the-spot consultancy, specifically geared to the needs for NFU. Each individual course lasts normally for six weeks.

The British Council also runs courses specifically on the production of broadcasting and audio-visual media for non-formal education, but these are geared primarily to the needs of developing countries.

There are now about 20 distance education systems scattered round the world, but the only others that are sufficiently developed and have enough experience that is likely to be relevant to the needs of NFU are the University of Mid-America, based at Lincoln, Nebraska, Fernuniversität, Hagen, and Deutsches Institut for Fernstudien, (both West Germany), and the Memorial University, Newfoundland.

Whatever decisions are finally made about training, it should be one of the first tasks of the new administration, when in post, to draw up a training plan and schedule, indicating when people will be away (if at all), in relation to planned project development.

REFERENCES

33. ELLANN, B.A. and LJOSA, E. Computer-assisted marking on a distance education course. Mellom oss nr.8 Oslo: NKS, 1977

35. REKKEDAL, T. Correspondence studies: recruitment, achievement and discontinuation. Oslo:NKI-skolen, 1972

36. REKKEDAL, T. Innsendingsoppgavene i brevundervisning. Oslo: NKI-skolen, 1973

43. LJOSA, E. Correspondence students' first phase. Oslo: NKS, unpublished.

44. REKKEDAL, T. Technical studies - correspondence education and class teaching: a comparative and longitudinal study. Oslo:NKI-skolen, 1976.

45. LJOSA, E. Students' comments on teachers' handling of correspondence school assignments. Oslo:NKS, 1977

46. REKKEDAL, T. and LJOSA, E. Pre-prepared teachers' comments in correspondence education. Oslo:Brevskolerådet,1974

47. LJOSA, E. Standard questionnaire to students as a step in the evaluation of correspondence courses. Oslo: NKS, 1976.

48. LJOSA, E. Freedom of choice for correspondence students. Oslo: NKS, unpublished.

49. SKAALVIK, E. Læremidler og undervisningsformer. Oslo: Universitetsforlaget, 1977.

50. NVI Hvem bør prioriteres i voksenopplæringen? Trondheim: NVI, 1978.

51. NU B 1977:41 Nye veier i voksenopplæringen. Stockholm: Nordisk utredning, 1977

52. NVI Programnotat 1979-1983. Trondheim: NVI, 1978

9. HANDAL,G. Bruksfrekvens og bruksform for Norsk skoleradio. Linköping: Pedagogiska institutionen, Linköpings högskola,1973.

SECTION 11

COSTS FOR AN IMAGINARY PROJECT

11. COSTS FOR AN IMAGINARY PROJECT

Working assumptions

To get some idea of relative costs between different components that might be used for distance education, and more particularly to indicate the range of choices that may have to be made, it is worth looking at an imaginary project. I have chosen a short, 16-week language course, not because I think such a course should have high priority, but because there is some experience and more firm cost bases for such a multi-media course in Norway. However, as will become clear, my calculations are based on a totally imaginary project, and there is no direct connection with any project previously or currently planned.

The assumptions I have made are as follows:

1. A course spread over 16 weeks, with participants expected to spend at least four hours a week on study.
2. There will be four assignments during the course to be marked and commented on by a tutor.
3. Television is considered to be important, both for direct teaching (showing the use of language in realistic social situations), and for recruitment purposes.
4. An audio component is also considered to be important, particularly for exercises in listening and speaking the language.
5. A main text is being considered, specially designed from scratch, on a 16 lesson basis, using two specialists in the language as consultants, working a total of 12 man-months between them, to work on all aspects of the course.
6. A supplementary set of printed materials is also being considered. This would combine a number of functions: up-dating of the course (a kind of newsletter); partly an audio-vision component to help with the listening and speaking exercises, and broadcast notes; extra work for those with time and interest to do it, but more in the form of a magazine style (stories, puzzles, etc.)
7. The likely numbers are not known - 5000 a year are hoped for, but costs for other numbers will also be calculated.

8. The voluntary associations have agreed to try and find appropriate local centres, and it is known that nearly a 1000 schools have video cassette machines, and there is a national copying service.

It will be seen that there are basically three major areas for decision-making in this example: television; audio; and tutoring. All figures used here are based on calculations and assumptions from the earlier parts of the report.

The television decision.

From Section 5, pages 119-126, we can see what the costs are likely to be for eight television programmes, distributed:

1. By a single transmission of each programme, once every year for four years
2. By two transmissions (one a repeat at a different time) of each programme, every year for four years
3. By cassettes to local centres. (Table 7, Section 5, p.123, assumes that cassettes will be sent only to those centres with at least 10 students.)
4. By cassettes to homes.
5. By a combination of one transmission, and cassettes to centres.

From Table 8, it was clear that for a course with 5000 participants a year, a combination of cassettes and a single transmission was as cheap as transmission twice of each programme, and combined both the chance of controlling the use of the programme by the participants through using cassettes, with the opportunity for all students - even those too far away from a local centre - to see the programme at least once. In fact, if cassettes were distributed to all 100 centres, it costs proportionately very little more than to restricting it only to centres with 10 students, and makes administration easier as well:

Average no. per centre	No. of students per year.				
	500	1000	5000	10 000	50 000
5	889 000	928 000	1 240 000	1 240 000	1 240 000
10	869 500	889 000	1 045 000	1 240 000	1 240 000

The reason for the comparatively small differences is because the bulk of the cost is in production, and that once a course reaches 10 000 students a year, 1000 centres would average at least 10 students per centre.

Thus the decision would be to have one transmission, plus cassettes to each of the 1000 centres, stored there for four years. Cost: 1 388 000 kr. for transmission once
1 240 000 kr. for cassette distribution
Total: 2 628 000 kr.

The audio decision

It can be seen from Table 9, in Section 5, p.129 for a course of 5000 participants a year, over four years, it would be 198 000 kr. cheaper to send audio cassettes than to use two radio transmissions of each programme each year. Even if cassette costs have been underestimated, the educational benefits of students having their own cassettes, being able to use them when they like, and the chance it gives for close integration between the cassettes and printed material - i.e. audio-vision - suggest that cassettes would be preferable. Since even one transmission of each radio programme would cost 400 000 kr. over four years, and since television will be more powerful for recruitment purposes, cassettes alone would be sufficient.

Thus the decision would be to use audio cassettes only, distributed directly by mail to each student, and kept by the student. Cost: 600 000 kr.

The tutorial decision

There are three possible methods of tutoring, any one of which might be chosen, or various combinations of the three methods. These are: correspondence tuition, telephone tuition and face-to-face tuition.

Within correspondence tuition, there might be two methods: the more traditional one, where tutors have a very small amount of time for marking and commenting, and the "de-luxe" version proposed in Section 7, p.170-174. The traditional system would cost about 2 414 800 kr. over four years; the de-luxe version would cost about 4 161 160 kr.

With telephone tuition, telephone seminars can be ruled out on any extensive scale, unless there is a major revision of the tariffs. However, in Section 6, the cost of individual contact between a tutor and 10 students, spending 10 minutes each week individually with each student, came to 7 040 000 kr. for tuition costs, and 2 787 000 kr. for telephone costs, for calls within a 50 km. radius, a total of 9 827 000 kr. (Section 6, p.142)

Two assumptions might be made about costs for face-to-face tuition, one based on an average class size of 10, and one based on an average class size of 5. From Section 9, p.211, it can be seen that for a course with 5000 students over four years, the cost would be 3 520 000 kr. for 10 students per class, and 7 040 000 kr. for 5 students per class, with a teacher.

Deciding on the right tutorial mix is very difficult in this instance. Correspondence tuition is the only sure way of reaching all the students, as not all will have telephones, and not all will be able to get classes, or be able to find classes where there is a teacher. A mixture of all three methods will reach the most students with the richest provision of tuition, but would cost over 21 000 000 kr., or 1 000 kr. each student, just for the tuition component.

My solution would be a compromise: de-luxe correspondence

tuition, one call every two weeks for each student, and one class every fortnight at each of the 1000 centres.

Cost: de-luxe correspondence tuition:	4 200 000 kr.
individual telephone tutoring:	4 900 000 kr.
face-to-face tuition in fives:	3 500 000 kr.
total	12 600 000 kr.

This of course would be a maximum figure, as not all students could benefit from all components. This would come still to 630 kr. a student for tuition alone, and almost certainly in the light of demands for other courses and a total limit on expenditure, possibly one of these three components would have to go. Whether it should be face-to-face or telephone tuition probably can be answered only in the light of experience - evaluation could provide a very useful role in helping with this kind of decision. If these costs seem high, they should be compared to the 7 million kroner for tuition alone that such a course would cost for the traditional adult education course. Basically, one would be planning to spend an additional 5 600 000 kr. to reach students who would not normally attend a conventional course, or to keep more of those in the course who might have dropped out (i.e it should lead to an improvement in quality as well as quantity).

Other costs

The other costs are possibly less contentious. Print costs for a run of 20000 texts, including design and distribution, would come to 365 000 kr. The supplementary material, assuming replacement and redesign each year, would come to 332 200 kr. over four years. (In fact, the real cost would probably be considerably less, as there would not be that many changes.) (Section 8, p.190)

The cost of specialist consultants would come to 250 000 kr.

Publicity and registration costs are more difficult to calculate. For the lack of any better base, I would propose

something in the order of 10%,to cover publicity and other unforeseen expenditure, of the total project expenditure. Evaluation is easier to cost. Hiring an external consultant would cost about 50 000 kr., plus a similar amount for data processing and data handling.

Summary of costs

Putting these all together, we arrive at Table 24. For comparative purposes, I have also included figures for 1000 and 10000 students each year, although it is almost certain that different decisions would then be made:

	No. of students per year.		
	1000	5000	10000
Television	2 277 000	2 628 000	2 628 000
Audio	168 000	600 000	1 200 000
Correspondence tuition - de-luxe	832 000	4 161 000	8 323 000
Telephone tuition	983 000	4 900 000	9 830 000
Face-to-face in groups of five:	700 000	3 500 000	3 500 000
Main text	227 000	365 000	581 000
Supplementary print	253 000	332 000	398 000
Subject matter consultants	250 000	250 000	250 000
Evaluation	100 000	100 000	100 000
	5 790 000	16 836 000	26 810 000
Publicity, registration, etc:10%	579 000	1 684 000	2 681 000
Total	6 369 000	18 520 000	29 491 000
Average cost per enrolment	1592	926	737

Table 24: Total project costs over 4 years (in kr.)

Conclusions

These cost estimates, like any others, should be treated with a great deal of caution. Their reliability depends not only on the accuracy of the information supplied about costs, but also on the assumptions which have been made. However, it does give a little more indication of what costs might look like, and particularly the areas which are likely to take the biggest bite out of a budget.

First of all, a project could cost anything between 6 and 30 million kroner, depending on the number of students and the length of the course. While the example chosen - a 16 weeks course - is perhaps rather short, it is also more intensive and covers probably more students than most NFU courses will. 15-20 million kroner would seem to be a good general average cost for a project, as a guideline. Secondly, it can be seen that the tuition aspects are likely to be the most costly areas - taking up two-thirds of the cost of the 5000 a year course, and even more as course size increases beyond that. On the other hand, the audio-visual component constituted just about one-fifth of the cost of the 5000 a year course, but nearer 40% on the 1000 a year course. The best bargain is the print. Even if the subject consultants are included here, it comes to only 5% of the overall cost for the 5000 students a year course. Clearly, tuition costs will have to be watched very carefully, and careful evaluation ought to be made of their relative effectiveness, both in reaching disadvantaged students, and in helping them.

SECTION 12

SUMMARY AND CONCLUSIONS

12. SUMMARY AND CONCLUSIONS

MEDIA

1. Broadcast television is likely to be the main medium for delivery of audio-visual materials for distance education, at least in the first few years. Almost everyone has a television set at home, there is plenty of spare transmission time at suitable times for adult learners, and the technical facilities, in terms of studios and transmitters, already exist. Distribution by video cassette may be feasible very soon, but even then there will be educational advantages in direct transmission, since nobody is then disadvantaged by not having expensive video replay equipment or difficulty in reaching centres. (Section 4; Section 5, pp.118-126)

2. The decision to appoint a certain number of production staff for broadcasting implicitly determines a level of output and costs for broadcasting. To employ fully staff already funded by NFU will require an annual expenditure of just under 3,5 million kroner, and implies a production of eight television and 16 new radio programmes each year, or, over a four year period, 32 television programmes and 64 programmes to be transmitted each year. Employing two more television and two more radio producers would imply an annual total of 96 television and 192 radio programmes for transmission each year, at a total annual cost of nearly 10,5 million kroner. (Section 4, pp.66-68)

3. If NRK's proposed basis of costing is accepted, the average cost of a television programme will be 84 000 kroner and a radio programme 12 500 kr. This is good value, by comparison with other countries. (Section 4, p.69). However, except for unusually large courses, it will normally be both cheaper and better educationally to use audio cassettes rather than radio (Section 5, pp.128-129).

4. There is an urgent need to resolve the position of school broadcasting. It has been waiting for a policy decision for over 10 years, and with NFU being mandated to give priority to adult education, it is unsatisfactory for

schools broadcasting to be left in limbo (overlatt til seg selv) for yet another five years at least. It is not producing enough programmes, there is not enough educational influence on the programmes, and the services are underused, mainly because of lack of resources (Section 4, pp.32-33) The establishment of NFU does not offer any hope of solving this problem in the immediate future. A political decision is therefore needed, for one of three options: to close down the schools service; to insist that NRK gives it greater priority and resources; to give financial responsibility and educational control to the State educational system. (Section 4, pp.61-64). NFU does not seem to me to be the right organisation in any case to make decisions about priorities in schools broadcasting. This could become a millstone round its neck, from the recurrent difficulties that are likely to arise through school broadcastings' unresolved position conflicting with NFU's priorities in adult education. Certainly, decisions about employment of extra production staff and the transfer of the schools broadcasting budget to NFU should not be decided without a clear political decision first. A tentative solution is suggested in Section 5 (pp.133-134). No solution is likely to be satisfactory without increased expenditure in schools broadcasting.

5. The present copyright agreement on the recording of adult education programmes is unsatisfactory, and needs to be renegotiated, since adult education broadcasts are specifically excluded from video-recording. (Section 4, pp.71-72).

6. If possible, adult education programmes should each be broadcast twice, at different kinds of time, until a comprehensive video replay and distribution system is available nationally, when it will be better in most cases to combine one transmission with local availability on cassettes. (Section 4, pp.72-73; Section 5, pp.122-126).

7. There is currently taking place a rapid expansion in the availability of video recording and play-back facilities. Already, nearly 700 grunnskoler (20%) have machines, and private

ownership or rental is also exoanding rapidly. (Section 5,pp.99-105). There are practical problems though to be avercome in making schools' machines available to adults, and reliance on video replay facilities instead of broadcasting could seriously disadvantage just those students NFU should be reaching. (Section 5, pp.118-120).At the same time, video could be both a practical and an educationally desirable medium for distance education, in the right circumstances.

8. Statens filmsentral should be given the resources to provide a video copying service. This is needed both for schools now, and for adult education in the near future. This would cost less than 1 million kroner in capital costs, and about 500 000 kr. a year in recurrent expenditure.(Section 5, pp.126-129)

9. Audio-vision is a medium with excellent potential for distance education. It is both cheap, and has good educational features. (Section 5, pp.130-133)

10. There is no adequate non-broadcast video production facility suitable for the production of educational materials on a large scale, and it would be difficult to justify NFU using such a facility instead of NRK's more professional facilities (Section 5, pp.92-95;p.126)

11. The setting up of NFU, and more particularly new developments in technology, suggests the need for a central State institution which has operational responsibility for the distribution of a wide range of audio-visual materials, and which provides an integrated locus for non-broadcast production of "low-cost" media. Statens filmsentral's current role is too narrow, and it could be broadened into a national audio-visual centre, with wider responsibilities (Section 5, pp.132-134)

12.Print will be an essential component of most NFU projects. Methods of costing though need to be discussed, to ensure that they meet the needs of NFU, while at the

same time giving publishers a fair return. Print is probably the most cost-effective of the media, given its low costs comparative to other media (see Section 11). (Section 8).

TUTORING

13. There are good educational reasons for using the telephone for distance education, but currently, costs in Norway are too high. Some of the rates, especially for telephone conferencing, do seen open to challenge. It may be possible to negotiate new rates which would bring down costs for educational use substantially, yet at the same time increase the return to Televerket, without requiring basic changes in Televerket's costing principles. (Section 6)

14. Correspondence education will be an essential component of most NFU courses. Norwegian correspondence schools are capable of producing high quality correspondence materials, and their experience will be crucial in the early stages of NFU. However, tutoring services could be improved by providing tutors with more time for communication with students, by decentralising recruitment, so that tutors are nearer to their students, and by giving tutors a greater counselling role, through the use of telephone and possibly face-to-face tuition. This will require more money, but can be justified in terms of expecting lower drop-out rates. However, it has to be decided whether funding of correspondence tuition will be directly through NFU funds for NFU projects, or whether funds will be claimed through the current procedure. (Section 7, pp.167-174)

15. Although the provision of adult education through classes and study circles is impressive on a national scale, there are serious inequalities in local provision between those living in the big towns and those living in the country. Should then NFU concentrate more on making available existing courses to a wider range of people, or should it design new courses for specific target groups? (Section 9, pp.192-207)

16. Even if NFU is aiming to get primarily to those students who cannot get local face-to-face tuition on the normal scale, it would still benefit from being able to use local facilities for a local"centre". These centres will have a range of functions. It is more likely that schools could provide the full range of functions required, but according to local circumstances, libraries could also be useful centres. (Section 9, pp.207-208)

17. NFU will need a direct means of getting in touch with local communities. There also seems to be a need locally for someone who can act as a local co-ordinator for all the adult education provision in the locality, to act as a central information point for local people, and to provide advice and help for local students studying or wishing to study independently. The kommune kulturstyre could appoint such a person, either on a part-time or full-time basis. He or she would be invaluable to NFU as a contact person, being independent of any particular organisation. At the same time, NFU will need to use the voluntary organisations' extensive network for help in arranging classes, recruiting students, and finding local tutors. (Section 9, pp.208-210)

ADMINISTRATION

18. There was a good deal of controversy and conflicting viewpoints encountered about membership of the pre-project planning groups. Some organisations wanted their own organisation or media sector to be automatically members of each pre-planning project group, on the grounds that specialist knowledge was required before decisions could be made about choice and use of media, choice of appropriate organisations, and the services and facilities that could or could not be provided. Others wanted the pre-project planning group to be completely neutral, on the grounds that to have just one representative from a sector would not only possibly result in that sector getting preference over others, but that within a sector, that person would place his own organisation at an advantage over other organisations.

I found myself coming down heavily in favour of the latter view. I believe the pre-project planning group should be kept as small and as neutral as possible, for several reasons:

a. on what grounds could one or two media or producer sectors be given automatic membership, but not others? Yet to include all sectors would result in production areas dominating, and in a very large committee indeed.

b. for some sectors (such as correspondence education and publishing), the various interested parties have not been able to agree on a suitable system of representation or selection of representatives.

c. the question of drawing on specialist knowledge can be met by the small, neutral group (one or two specialists in the subject area - professors, doctors, musicians, etc. - plus a member of the NFU professional staff, and perhaps a representative from the target group) meeting as many times as necessary with representatives of the various possible co-operating bodies, either individually or in group meetings, but with the neutral group having the final decision. It seems to me that only in this way is it possible to ensure right from the beginning that the needs of the target group, rather than the ambitions of the various organisations, can be guaranteed to be met.

Whether or not this view is accepted, it is important for NFU to clarify very quickly - after open discussion with as wide a range of possible co-operative partners - the exact procedure for the choice of pre-project planning groups and their operation, as at the moment there is a lot of anxiety and suspicion over how NFU is going to operate. This needs to be done before the first pre-project planning group is set up.

19. Registration needs to be thought about very early. What kind of records, if any, will NFU want to keep? How

will this be organised? It seems to me that NFU will need its own computerised registration and student records system (Section 10, pp.214-216)

20. Related to the registration question is the issue of evaluation. I think it will be important, if NFU is to take evaluation as one of its functions, that one of the early educational appointments should have an evaluation background, and be responsible for developing a policy and system for evaluation, but with much of the evaluation data-collection and analysis being contracted out, as part of the projects' budget. (Section 10, pp. 217-223)

21. While there is also likely to be a need for training of NFU staff, also of staff from co-operating institutions likely to work on NFU projects, and most of all of possible members of pre-project planning groups, this is likely to conflict with the need to get projects started as soon as possible. The best solution is to base as much training as possible "on the spot", as part of actual projects, although a clear training plan should be drawn up. (Section 10, pp. 223-225)

22. Project costs will vary according to the size of courses, and the kind of provision thought necessary. A likely, reasonable figure though on which to work would be between 15 to 20 million kroner a course, covering all costs from institutions, etc. By far the largest part of the costs - possibly two-thirds or more - will come from tutorial provision, and these need to be examined very carefully indeed. It still has to be decided whether NFU will pay full costs from its own budget, whether students will contribute, or whether co-operating organisations will claim back some or all of their costs through existing procedures. This is likely to be perhaps the most crucial decision determining the future and nature of NFU. (Section 11).

GENERAL

23. By concentrating on issues which still have to be

resolved, and on areas of possible difficulty, the report as a whole gives a misleading picture of attitudes towards the idea of distance education, and towards NFU as an institution. Nowhere did I meet outright hostility to the idea. Some people were naturally cautious, one or two even suspicious, but everyone I met was, at worst, prepared to give it a chance. In many other instances, there was clearly very much goodwill towards the new institution, a genuine willingness to put the full resources of their own organisation behind NFU. Particularly encouraging was the reaction of the admittedly few people I met in the grass-roots. The "non-professional" people - as well as the professionals - in Røros were clearly favourable to the concept of distance education, and could see that it could meet a real need. This is probably more important than any technical solutions to problems. Where there is a will, there is a way.

24. It is very important that NFU starts producing its own projects as quickly as possible, to build on and reinforce that good-will. Many of the paper problems will disappear when real projects appear - even if they are inevitably replaced by others that have not bee foreseen! If I have a serious criticism to make, it is that movement towards getting started has been very slow since Parliament approved the setting up of NFU, and there is a danger of impetus being lost by trying to create the perfect system.

25. The recent appointment of the new board will, of course, provide a much-needed impetus. It does mean though that I shall be leaving Norway at just the time when the most intersting interesting developments are likely to take place. I shall be sorry about that; I hope this report will be helpful, both to the new board, and especially to the new administration, in building up an impetus; I shall not be sorry though if this report proves to be hopelessly out of date or irrelevant by the end of 1979 - that will mean that the real work of NFU had begun. The potential, the excitement of a real innovation and breakthrough in both adult education and distance education is very real. If the idea of a co-operative partnership in

this field can work anywhere, it must be Norway. I wish then NFU much success in its new venture, and I am grateful for the opportunity to be associated with its early days, even if only peripherally.

BIBLIOGRAPHY

BATES,A.W. "Options for delivery media" in PERRATON,H.(ed.) Distance Teaching for Formal Education. Washington,D.C.: World Bank, 1978

BATES,A.W. Student Use of Open University Broadcasting. Milton Keynes: Open University, 1975.

BATES,A.W. "Suggested guidelines and criteria for the allocation of broadcasts," in McKENZIE,N., POSTGATE,R. and SCUPHAM,J. Open Learning. Paris:UNESCO, 1975

BATES,A.W. and KERN,L. Alternative Media Technologies for the Open University. Milton Keynes:Open University, 1977.

BREVSKOLERADET Årsmelding for 1977.Oslo:Brevskolerådet, 1977

DAVIES,N.F. The Use of the Telephone in Distance Teaching. Linköping: Department of English, University of Linköping, 1976

ELLAN,B.A. and LJOSA,E."Forsøk med EDB-retting i kurset Samfunns- og næringslære". Mellom Os.nr.8. Oslo: NKS, 1977

FINSTAD,N. and HANSEN,H. Voksenopplæring for hvem? Oslo:Tiden Norsk Forlag/A.O.F., 1976

FLINCK,R. The Telephone Used in an Experiment of Distance Education. Lund: University of Lund, 1976.

FREEMAN,R. "Open Learning Now?" The Listener. October 14, 1976

GIRE DAHL, A. Skolen som Marked. Bergen: Bergen Lærerskole, 1978

GRUNDIN,H. Broadcasting and the Open University Student: The 1977 Survey. Milton Keynes: Open University, 1978

HANDAL,G. Bruksfrekvens og bruksform for Norsk skoleradio. Linköping: Pedagogiska Institutionen, Linköping Högskola, 1973.

HANSEN,H. Allment grunnkurs for voksne. Oslo: A.O.F., 1978

HASLE,J.A. and SEIM,A. Kartlegging av bruken av skolefjernsyn. Oslo, NRK, 1976.

HAVOLD,J.I. Hvordan kan Televerket Betjene en Fremtidig Norsk Fjernundervisning? Oslo: Konferanse om telekommunikasjoner i fjernundervisning, 1978

JORSTAD,A.L. Bibliotekene og Norsk fjernundervisning. Voksen-opplæring. No.3, 1978

KIRKE- OG UNDERVISNINGSKOMITEENS INNSTILLING OM FJERNUNDERVISNING Innst.nr.218. Oslo, 1977

KIRKE- OG UNDERVISNINGSDEPARTEMENTET. Rundskriv F37/78: Adgangen til å fremstille lyd- og billedopptak av skolekringskastingsprogram m.m. til bruk i undervisningsvirksomhet. Oslo: 6 mars, 1978

KIRKE- OG UNDERVISNINGSDEPARTEMENTET. St.prp.nr.1 (1977-78) for Budsjetterminen 1978. Oslo: 1977.

KIRKE- OG UNDERVISNINGSDEPARTEMENTET. St.prp.nr.1 (1978-79) for Budsjetterminen 1979. Oslo: 1978.

KIRKE- OG UNDERVISNINGSDEPARTEMENTET. St.prp.nr.9 (1975-76) om Voksenopplæring. Oslo: 1976

KIRKE- OG UNDERVISNINGSDEPARTEMENTET. St.prp.nr.139 (1975-76) om fjernundervisning. Oslo: 1976

LJOSA,E. Correspondence students' first phase. Oslo: NKS, unpublished.

LJOSA,E. Course design and media selection: some implications on co-operation between broadcasting, publishing and distance education organisations. Oslo: NKS, 1977.

LJOSA,E. Freedom of choice for correspondence students. Oslo: NKS, unpublished.

LJOSA,E. Standard questionnaire to students as a step in the evaluation of correspondence courses. Oslo: NKS, 1976.

LJOSA,E. Students' comments on handling of correspondence school assignments. Oslo: NKS, 1977

McINTOSH,N., CALDER,J. and SWIFT,B. A Degree of Difference. London: Society for Research into Higher Education, 1976.

MALMIN,B. "Start 1": Correspondence Student Enquiry. Oslo: Folkets Brevskole, 1977

NESS,T, Handelsskoleeksamen pr. brevkurs. Oslo: Pedagogisk Forskningsinstitutt, Universitetet i Oslo, 1976.

NORGES OFFENTLIGE UTREDNINGER Læremidler i skole og voksenopplæring. Oslo: Universitetsforlaget, 1978

NORSK FJERNUNDERVISNING Instilling fra Interimsstyret for Norsk fjernundervisning om Norsk fjernundervisnings organisasjon. Oslo: Kirke- og undervisningsdepartemente, 1978.

NORSK RIKSKRINGKASTING Tilråding fra fjernundervisningsutvalget. Oslo: NRK, 1977.

NORSK RIKSKRINGKASTING Arbok, 1977. Oslo: NRK, 1977

NU (NORDISK UTREDNING) Nye veier i voksenopplæring.Stockholm: Nordisk Utredning, 1977.

NORSK VOKSENPEDAGOGISK INSTITUTT Programnotat 1979-1983. Trondheim: NVI, 1978.

NORSK VOKSENPEDAGOGISK INSTITUTT Hvem bør prioriteres i voksenopplæringen?. Trondheim: NVI, 1978.

RANDE,Hj. Norsk fjernundervisning - et lite "koplingsbord" Videregående Opplæring. No.6, 1978

READ,G. Cyclops: an Audio-Visual System. Milton Keynes: Open University, 1978

REKKEDAL,T. Correspondence studies: recruitment, achievement and discontinuation. Oslo: NKI-skolen, 1972

REKKEDAL,T. Innsendingsoppgavene i brevundervisningen. Oslo: NKI-skolen, 1973

REKKEDAL,T. Technical studies-correspondence education and class teaching: a comparative and longitudinal study. Oslo: NKI-skolen, 1976

REKKEDAL,T. and LJOSA,E. Pre-prepared teachers' comments in correspondence education. Oslo: Brevskolerådet, 1974

SCHRAMM,W. Big Media Little Media. London: Sage, 1977.

SKAALVIK,E. Læremidler og undervisningsformer. Oslo: Universitetsforlaget, 1977.

STATENS FILMSENTRAL Årsmelding, 1977. Oslo: Statens filmsentral, 1977.

STATISTISK SENTRALBYRÅ Radio- og fjernsynsundersøkelsen, 1977. Oslo: Statistisk Sentralbyrå, 1977.

STATISTISK SENTRALBYRÅ Tidsnyttingsundersøkelsen 1971-72, Hefte 1. Oslo: Statistisk sentralbyrå, 1977

STATISTISK SENTRALBYRÅ Utdanningsstatistikk: Voksenopplæring, 1975-6 Oslo: Statistisk Sentralbyrå, 1977.

STATISTISK SENTRALBYRÅ Voksenopplæring 1969-1974. Oslo: Statistisk Sentralbyrå, 1976.

TUROCK,B. "Telephony: a passing lunacy or a genuine innovation?" Teaching at a Distance. No.8, 1977

UNIVERSITY OF WISCONSIN The telephone in education. Madison, Wisconsin: Proceedings of the University of Wisconsin extension conference, 1976

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Journalist Pål Nordenborg	Arbeiderbladet, Oslo

APPENDIX 3

INSTITUTIONS AND ORGANISATIONS CONTACTED IN THE COURSE OF THE STUDY

(Note: the contact was with individuals in each organisation, whose views do not necessarily reflect the formal position of their organisation - see Section 3).

Norsk Rikskringkasting
Pedagogisk Forskningsinstitutt, Universitetet i Oslo
Statens filmsentral
Roger Arnhoff A/S
Norsk Philips A/S
Norsk Dokumentarfilm A/S
Norsk Språkinstitutt
A/V avdelingen, Universitetet i Bergen
Kontaktutvalget, NRK
Kulturavdelingen, Kirke- og undervisningsdepartementet
Televerkets forskningsinstitutt
Universitetsforlaget
H.Aschehoug & Co.
Norsk Korrespondanseskole
NKI-skolen
Folkets Brevskole
Folkeuniversitetet
Arbeidernes Opplysningsforbund, Oslo
Media-avdelingen, Bergen Lærerskole
Røros skolekontor
Friundervisningen, Røros
Studiesamnemnda i Sør-Trøndelag
Norges Husmorforbund, Røros
Sør-Trøndelag koperative fylkeslag
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Norges Bondekvinnelag i Sør-Trøndelag
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